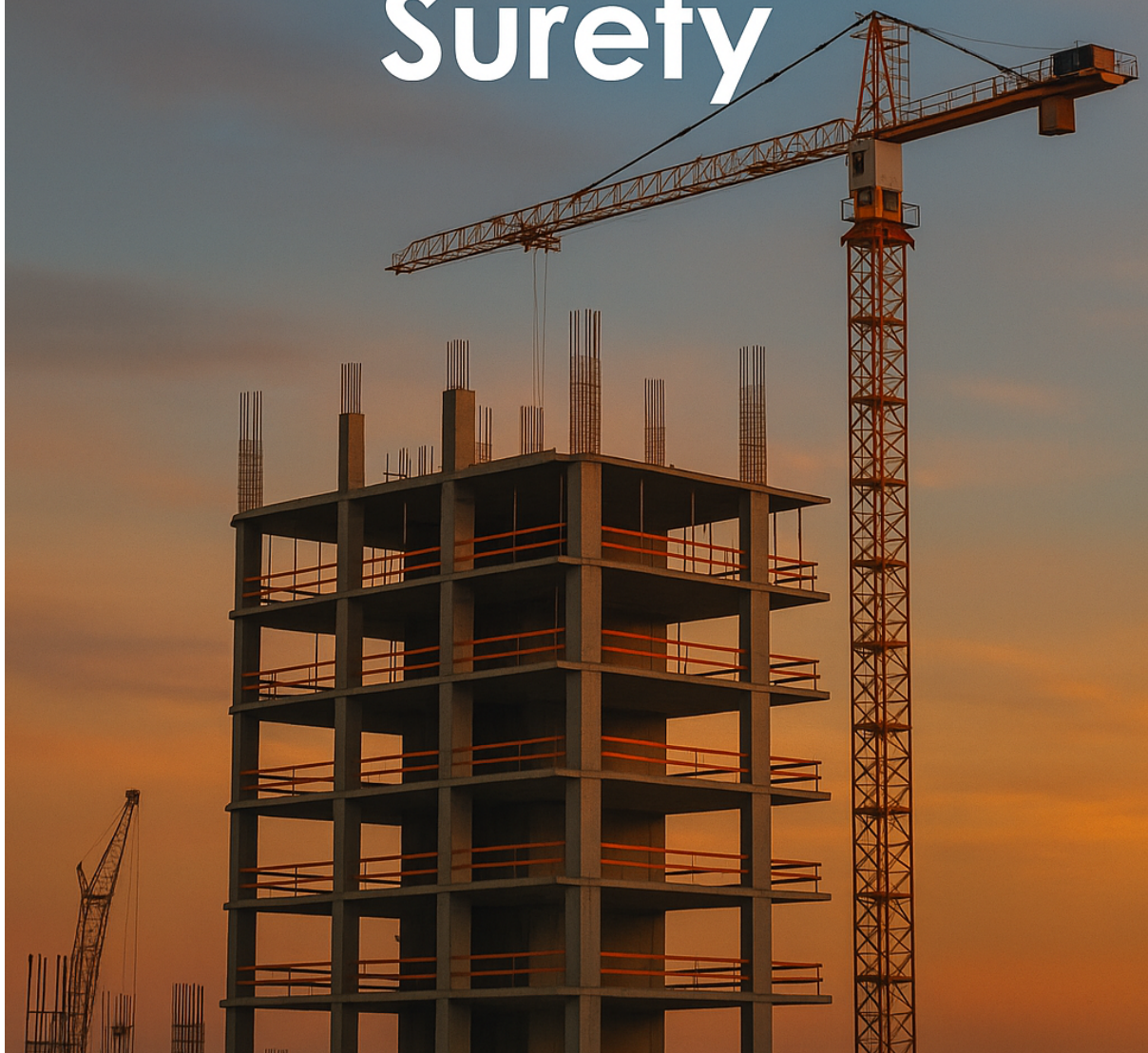


Engineering Insurance, Bonding, and Surety



Course Description

This course equips U.S. engineers with the vocabulary, structures, and decision tools to align project contracts with insurance and surety instruments that actually work at claim time. Participants build a working command of CGL, professional liability, builders risk, workers' compensation, auto, pollution (CPL/PLL), and specialty endorsements (AI/PNC/waivers), and learn how these coverages interact with AIA/EJCDC terms, delegated design, design-build, and public-work bonding requirements. The course balances statutory anchors (e.g., Miller Act, FAR, CERCLA/RCRA, TSCA), current market practice, and practical workflows for notice, tender, ADR, and AIA A312 bond claims.

Across the course and worked case studies, engineers practice translating contract requirements into policy language and evidence (endorsements, not just certificates), avoiding uninsurable promises, and preserving remedies through disciplined documentation. Environmental and international modules address PFAS/NPDWR developments, MCS-90 transportation overlays, Controlled Master Programs (DIC/DIL), on-demand guarantees, export controls (EAR/ITAR), sanctions screening, and GDPR/UK data-transfer tools so multidisciplinary teams can deliver confidently in both domestic and cross-border settings.

Learning Objectives

By the end of this course, participants will be able to:

- Distinguish surety bonds from insurance and map bid/performance/payment bonds to contract triggers and AIA/EJCDC workflows.
- Interpret CGL, umbrella/excess, and professional liability insuring agreements, exclusions, conditions, and endorsements in project context.
- Specify and verify additional insured, primary/non-contributory, and waiver-of-subrogation requirements with the correct ISO forms and evidence.
- Align delegated design and design-build obligations with bond rights, professional liability, and subcontractor risk controls (including SDI vs subcontract bonds).
- Structure property/inland marine programs (builders risk, installation, equipment) and coordinate them with wrap-ups and project delivery.
- Plan and execute notice and tender strategies (own policy and additional-insured tenders), manage reservation-of-rights, and navigate ADR timelines.
- Evaluate environmental exposures and select CPL/PLL, transportation/NODS, and auto endorsements; integrate PFAS, CERCLA, and stormwater requirements.
- Apply claims-made mechanics (retro dates, ERP/tails) for design firms, PSPL/OPPI for large projects, and rectification coverage in contractor-led delivery.
- Manage international risk using Controlled Master Programs (local admitted + DIC/DIL), on-demand guarantees/URDG, Incoterms®-aligned cargo cover, and export/sanctions/data controls.
- Build an end-of-project checklist for waivers, correction periods, statutes of repose, surety releases, and ERP/tail purchases.

Intended Audience

This course is intended for licensed professional engineers practicing in the United States across civil, structural, geotechnical, transportation, water/wastewater, environmental, mechanical, electrical, industrial, and construction engineering

disciplines. It is also applicable to engineering project managers and owner's representatives who review contracts, insurance exhibits, and bonds; and engineers working in design-build, CM-at-Risk, IPD, or P3 environments who must coordinate risk transfer with legal, finance, and procurement teams. (Land surveyors and construction managers will also find the bonding and contract-insurance alignment modules directly applicable.)

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Chapter 1: Foundations of Engineering Risk and Insurance

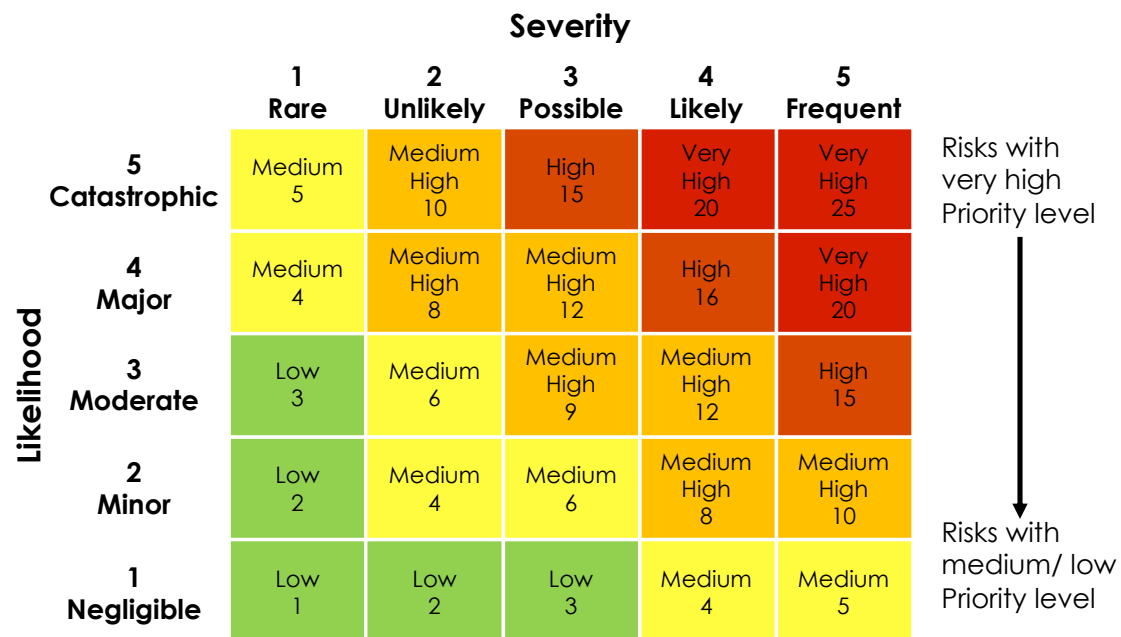
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The engineer's risk landscape: hazard, exposure, frequency, severity

In engineering projects, *hazard* describes the condition or circumstance that can lead to loss (e.g., excavation collapse; incorrect relay settings). *Exposure* captures the extent to which people, property, or financial interests are situated such that the hazard can affect them (e.g., number of field personnel, length of sheeting line, value placed at risk). From an actuarial perspective, *frequency* refers to how often a category of loss is expected to occur over a given period, whereas *severity* is the average (or distribution of) loss size when a loss occurs (NAIC, 2025; Investopedia, 2015).

Using frequency–severity thinking helps engineers prioritize controls where low-frequency/high-severity events (e.g., crane overload) demand disproportionate attention compared to high-frequency/low-severity items (e.g., minor tool damage) (Investopedia, 2015).

Figure 1 illustrates how frequency–severity mapping supports prioritization of risk treatments consistent with ISO 31000 guidance (ISO, 2018). Cells in the upper-right (Frequent–Catastrophic) indicate risks that generally require elimination, robust engineering controls, or risk transfer.



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Figure 1. Risk matrix (qualitative)

Risk financing options: from retention to transfer (including surety)

Risk treatment in projects couples prevention with financing for residual risk. *Retention* is the planned acceptance of loss through deductibles, self-insured retentions (SIRs), funded reserves, or deliberate noninsurance. Under a deductible, the insurer pays a covered loss and seeks reimbursement up to the deductible; under an SIR, the insured funds defense/indemnity until the SIR attaches (IRMI, 2017; IRMI, 2024). Retention is efficient for predictable, lower-severity losses if capital cost and volatility are acceptable (IRMI, 2006).

Transfer via insurance moves defined financial consequences to an insurer in exchange for premium, subject to limits and exclusions. Alternative mechanisms include captives and risk pools (discussed below).

Finally, *suretyship* is neither insurance in the indemnity sense nor a first-party risk transfer; it is a three-party credit instrument in which the surety guarantees the principal's performance to the obligee. In the federal space, acceptable sureties are listed in U.S. Treasury Circular 570, and the Miller Act requires performance and payment bonds on qualifying public building and works contracts (Fiscal Service, 2025; eCFR, 31 CFR Part 223; LII, 40 U.S.C. § 3131). The U.S. Small Business Administration (SBA) further backstops bid, performance, and payment bonds through its Surety Bond Guarantee (SBG) program, expanding access for smaller contractors (SBA, 2025).

Table 1 contrasts who funds early loss dollars, who conducts defense, and how volatile the firm's net cost is across financing methods. Sources: IRMI definitions and commentary (IRMI, 2017; 2006; 2024).

Table 1: The risk-financing continuum for engineering firms

Approach	Who pays first dollar?	Who manages defense?	Volatility of net cost	Typical use case
Complete retention (no insurance)	Firm	Firm	Very high	Trivial exposures with tight control
Funded retention (reserve/captive)	Firm (pre-funded)	Firm/TPA	High but smoother	Predictable attritional losses
Deductible (policy pays then bills back)	Insurer initially	Insurer	Moderate	Property/auto, some GL
SIR (insured pays to attachment)	Firm to SIR	Firm (often)	Moderate-high	Larger firms' liability programs
Traditional insurance (transfer)	Insurer	Insurer	Low-moderate	Catastrophic loss protection
Surety bond (credit guarantee)	Principal for losses; surety recovers from principal	Surety manages completion strategy	N/A (credit, not risk transfer)	Performance/payment obligations

Market structure and roles: agents/brokers, carriers, MGAs, surplus lines, and risk pools

Engineers most often interface with *producers*, a state-licensed category that includes agents and brokers who sell, solicit, or negotiate insurance (NAIC, 2025). In general, an *agent* is appointed by an insurer, while a *broker* represents the insured and surveys the market; for complex commercial risks, NAIC consumer guidance explicitly recognizes the broker's client-representative role (NAIC, 2025; NAIC, 2023).

Managing general agents (MGAs) act under contract to manage all or part of an insurer's business (e.g., underwriting, binding, claims authority), and are regulated via NAIC's Managing General Agents Model Act (NAIC, 2024). When an admitted market cannot or will not write a risk, coverage may be placed with a *surplus lines* (nonadmitted) insurer through a licensed surplus lines broker; regulation focuses on the transaction (including eligibility and premium tax) rather than traditional rate/form filing (NAIC, 2023).

Public entities and associations may participate in *risk pools* (including joint powers arrangements and NAIC-recognized pools), sharing losses on a predetermined basis; risk retention groups under the federal LRRRA are member-owned liability insurers operating under combined state-federal frameworks (NAIC, 2023; NAIC, 2025).

Practice note for engineers:

Producer and surplus lines structures vary across states. Verify that certificates, endorsements, and notice provisions promised in contracts can actually be delivered within the chosen market (admitted vs nonadmitted), and that any delegated authority (MGA/program administrator) is aligned with the insurer listed on the policy.

Claims-made versus occurrence liability coverage

Understanding coverage *trigger* is essential. *Occurrence* policies respond to bodily injury or property damage that *occurs* during the policy period, even if the claim is made years later. *Claims-made* policies respond when the *claim is made and reported* during the policy period, subject to any *retroactive date* that bars claims arising from acts before that date. Professional liability (A&E/E&O) is typically written on a claims-made basis; general liability is often occurrence-based, although claims-made CGL exists (NAIC, 2025; IRMI, 2012; PwC Viewpoint, 2024).

Retroactive dates and tails.

The *retroactive date* defines how far back covered acts may have occurred. If a claims-made policy lapses or the retro date is advanced, the insured can face a gap. An *extended reporting period (ERP)*, also called *tail coverage*, permits reporting after expiration for acts that occurred before policy end, typically offered for a fixed period (e.g., 1–6 years) and often priced as a multiple of the expiring premium (IRMI, 2023; IRMI, n.d.; CRC Group, 2023; Insureon, 2023). Occurrence policies inherently include a “tail” because the trigger is the date of occurrence (IRMI, 2023; NAIC, 2025).

Engineers should routinely ask for retro date continuity and ERP options when switching carriers or retiring from practice (see Table 2).

Table 2: Claims-made and occurrence: What engineers must compare

Feature	Claims-made	Occurrence
Primary trigger	Claim made and reported during policy term (subject to retro date)	Loss occurs during policy term
Managing “tail” risk	ERP/tail endorsement purchasable	Inherent tail; no ERP needed
Common lines	A&E/E&O, D&O, EPL, some CGL	CGL, many property-related liability extensions
Key pitfalls	Lapse without ERP; advancing retro date	Long-tail IBNR for insurer; insured relies on historical limits/forms

Integrating risk frameworks with insurance decisions

Standards bodies position risk financing (insurance and surety) within an *enterprise* approach to risk. ISO 31000:2018 emphasizes principles, governance, and iterative processes to identify, analyze, evaluate, and treat risk; it explicitly encourages aligning treatments (controls, finance) to objectives and context (ISO, 2018; ISO, 2018 news release).

COSO’s ERM framework (2017; updated guidance) organizes risk with strategy, performance, review, and information/reporting, which helps convert frequency–severity insight into risk appetite, limits, and coverage structures (COSO, 2017/2020). For engineers, this means starting with a risk register and treatment plan, then selecting insurance/bonding instruments that target catastrophic volatility, contract requirements, and lender/owner covenants (ISO, 2018; COSO, 2017).

Engineering risk treatment integrates prevention with fit-for-purpose financing; Table 3 shows how typical exposures map to policy types and bonding.

Table 3. Mapping project risks to treatments and financial instruments

Risk example	Primary control(s)	Financing choice
Utility strike during trenching	Subsurface utility engineering (SUE), potholing, permit controls	CGL occurrence for third-party damage; contractor's pollution liability where applicable
Design error in pump sizing	Peer review, V&V, QA/QC gates	A&E professional liability (claims-made) with continuous retro date and ERP plan
Contractor default on a public works bridge	Prequalification, schedule controls, escrow of critical materials	Performance and payment bonds (Miller Act/Little Miller), surety completion options
Theft of survey equipment	Physical security, GPS tagging	Inland marine (equipment floater), deductible calibrated to attritional loss history

Practical application: avoiding a claims-made gap

Consider an environmental engineering firm that has carried a claims-made A&E policy since 2016 with a 2016 retro date. In 2025, it contemplates switching carriers and raising limits. If the new policy sets a retro date of 2022, undocumented work performed from 2016–2021 becomes *outside* coverage.

The firm's options are:

- a) negotiate continuity of the 2016 retro date with the new carrier;
- b) keep the 2016 policy's ERP ("tail") and buy the new program for future work; or
- c) restructure via project-specific coverage where warranted.

Each path carries cost–benefit tradeoffs that should be analyzed against backlog and statute-of-repose profiles. Guidance from NAIC and IRMI underscores verifying retro dates and tail options during any transition (NAIC, 2025; IRMI, 2023).

Surety as credit enhancement rather than risk transfer

While insurance pools stochastic loss, surety underwrites the contractor's capacity and expects *indemnity from the principal* for any loss. Federal agencies require bonds on most construction contracts via the Miller Act; contracting officers accept bonds underwritten by Treasury-certified companies listed on Circular 570.

Engineers advising owners or serving as construction managers should recognize that surety capacity depends on the contractor's working capital, net worth, bank support, and track record. Small contractors may obtain bonds through the SBA SBG program, which guarantees approved sureties to broaden access (LII, 40 U.S.C. § 3131; Fiscal Service, 2025; SBA, 2025).

Conclusion

Engineers can make better project and contract decisions by:

- 1) framing risks through hazard, exposure, frequency, and severity;
- 2) matching residual risks to a deliberate position along the retention–transfer continuum;

- 3) understanding how producers, carriers, MGAs, surplus lines markets, and pools operationalize access to coverage; and
- 4) distinguishing claims-made from occurrence, with careful attention to retro dates and tail provisions.

In public and private works, surety is a credit guarantee, complementary to but distinct from insurance, and its availability is shaped by contractor financials and federal and state rules. These concepts provide the scaffolding for the detailed policy and bonding topics that follow.

Chapter 2: U.S. Legal and Regulatory Context



State-based insurance regulation and preemption limits

The U.S. Congress has declared that the *continued regulation and taxation by the several States of the business of insurance is in the public interest*, a policy embodied in the McCarran–Ferguson Act (15 U.S.C. § 1011 et seq.). Practically, this means insurers, producers, and policy forms are regulated primarily by individual states, with national coordination and model law development led by the National Association of Insurance Commissioners (NAIC) (NAIC, 2025). Federal law leaves this structure intact and periodically reaffirms it (15 U.S.C. § 6701).

For non-admitted/surplus lines, the Nonadmitted and Reinsurance Reform Act (NRRA) concentrates regulatory authority and premium tax collection in an insured's *home state*, reducing multi-state friction (15 U.S.C. § 8201). For engineers, the immediate implications are that endorsements, filings, producer licensing, and surplus lines placements are dictated by state law, even on multistate projects, while NRRA's "home state" rule governs surplus lines compliance. (15 U.S.C. §§ 1011, 6701, 8201; NAIC, 2025).

Table 4 shows day-to-day insurance tasks (endorsements, certificates, proofs) within a hierarchy: federal rules set bonding for federal jobs; states regulate insurance; contracts operationalize risk transfer obligations.

Table 4: Regulatory layers that affect project risk financing

Layer	What it controls	Examples relevant to engineers
Federal statutes & rules	Federal procurement bonding; Treasury approval of sureties; limited federal insurance preemption	Miller Act (40 U.S.C. §§ 3131–3134); FAR Part 28; Treasury Circular 570; 31 CFR Part 223
State insurance regulation	Admission, forms, rates, producer licensing, surplus lines home-state rule	NAIC model acts; state DOI bulletins; NRRA home-state premium tax
Contract documents	Who must insure whom; AI/PNC/waiver; limits; evidence	ALA A201 exhibit; owner/CM insurance specs; project-specific addenda

Federal procurement: the Miller Act, FAR, and Treasury certification

On federal “public building or public work” contracts, the Miller Act requires prime contractors to furnish *performance* and *payment* bonds; it also grants claim rights to laborers and material suppliers (40 U.S.C. §§ 3131–3134). Implementing rules appear in the Federal Acquisition Regulation (FAR Part 28), which also addresses bid guarantees and acceptable security.

The U.S. Department of the Treasury lists companies authorized to write federal bonds in *Circular 570*; agencies must accept bonds only from certified sureties (31 CFR Part 223; Circular 570). SBA’s Surety Bond Guarantee program can backstop bid, performance, and payment bonds to help small businesses qualify.

Engineers engaged by federal owners or as CM/GC advisors should align procurement schedules and prequalification with these requirements, including verification of surety status on Circular 570 before bid. (LII; FAR Part 28; 31 CFR Part 223; Treasury Circular 570; SBA).

State and local public works: “Little Miller Acts”

Nearly every state has enacted “Little Miller Act” statutes that require payment (and often performance) bonds on state and local public projects, but dollar thresholds, timing, notice, and fee-shifting rules vary materially.

For example, California generally requires a *payment* bond on public works exceeding \$25,000 (Cal. Civ. Code § 9550), Florida sets different thresholds and exemptions in § 255.05, and New York State Finance Law § 137 governs payment bonds and claimant rights. Because these differences affect claim deadlines and recoverable costs, contract administrators should map each project’s statute before bid and flow down notice requirements to lower-tier subs. (California Civ. Code § 9550; Fla. Stat. § 255.05; N.Y. State Fin. Law § 137; state surveys).

Table 5 shows how core bonding obligations are common across regimes, while thresholds and claim procedures differ; engineers must read the governing statute, and not rely on general custom.

Table 5: Federal Miller Act vs. selected Little Miller Acts (illustrative)

Feature	Federal (Miller Act)	California (Civ. Code § 9550)	Florida (§ 255.05)	New York (SFL § 137)
Applicability threshold	Generally ≥\$100,000 for construction contracts	Payment bond on public works >\$25,000	Thresholds and exemptions; some low-value contracts exempt	Public improvements; agency may/shall require bond
Who is protected	Laborers/material suppliers to prime and subs	Claimants furnishing labor/materials	Claimants with statutory notice compliance	Similar claimants; specific notice and suit timing
Key timing	Notice/suit windows under § 3133	Statutory bond required at award	Statutory notices and recording requirements	90-/120-day claim mechanics appear in practice guidance

Evidence of insurance: certificates, endorsements, and what counts

A *certificate of insurance (COI)* is informational and does not amend, extend, or alter coverage. Many states codify this principle, and the ACORD 25 form prints it prominently. Texas Insurance Code § 1811.152 states that a certificate “is not a policy of insurance and does not amend, extend, or alter” coverage; New York’s Department of Financial Services similarly regulates certificate forms and approvals.

Therefore, when contracts demand *additional insured (AI)*, *primary and non-contributory (PNC)*, or *waiver of subrogation*, the only reliable evidence is the actual policy wording or a carrier-issued endorsement, *not* the COI (see Table 6). Engineers should require copies of the relevant endorsements and verify that form numbers and dates match the requirement. (Tex. Ins. Code § 1811; NY DFS; ACORD 25).

Table 6: Evidence vs. actual coverage (what owners/CMs should obtain)

Item requested in contract	Is a COI sufficient?	What to obtain to make it real
Additional insured (ongoing & completed ops)	No	AI endorsements (e.g., CG 20 10/CG 20 37 or equivalents) naming required parties and work
Primary & non-contributory status	No	Endorsement or policy “other insurance” modification stating PNC for the AI
Waiver of subrogation	No	Waiver endorsement (e.g., CG 24 04; WC waiver as applicable)
Notice of cancellation (e.g., 30 days)	No	Policy endorsement providing the specific notice obligation

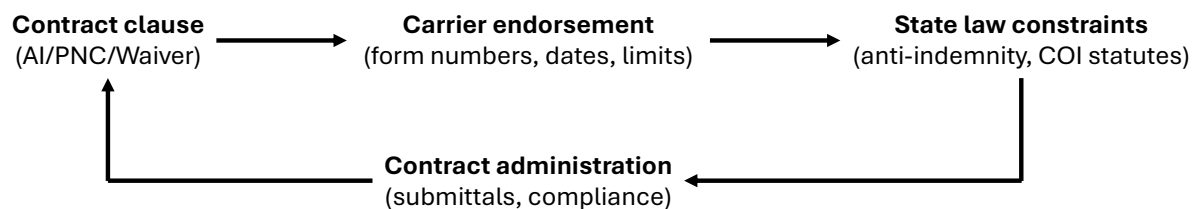
Additional insured, PNC, and waiver; legal effect and common pitfalls

Contract terms requiring AI, PNC, and waivers work only to the extent permitted by policy language and state law. Standard ISO AI endorsements for owners/contractors limit coverage to liability “caused, in whole or in part,” by the named insured’s acts; some versions exclude completed operations unless a separate endorsement (CG 20 37) is added.

Many AI forms and the dedicated architect/engineer AI endorsement (CG 20 32) expressly exclude professional liability, which is why engineers still need stand-alone professional liability cover. PNC status is a separate issue: waiving subrogation does

not make coverage primary; PNC must be created by endorsement modifying “other insurance.” IRMI’s technical analyses explain these boundaries and their interaction with anti-indemnity statutes in several states. (IRMI, 2018; IRMI, 2014; IRMI, 2022; IIAT form notes).

Figure 2 below shows a closed Contract–Policy–Statute alignment loop. Effective risk transfer requires all three legs to align; if any fails (e.g., COI with no endorsement), the intended allocation collapses.



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Figure 2: Contract–Policy–Statute alignment loop.

Anti-indemnity statutes and their spillover into insurance

Most states limit or prohibit contract provisions that require one party to indemnify another for the latter’s *sole* or *concurrent* negligence. Some statutes also restrict how far AI coverage can extend to protect an upstream party for its own negligence. Because these rules vary, a contract form drafted for one jurisdiction may be unenforceable in another without amendment.

Engineers drafting or reviewing insurance exhibits should pair indemnity language with AI requirements that are enforceable in the project state. State-by-state surveys by reputable legal publishers summarize the landscape, but project teams should confirm the controlling statute and recent case law. (LexisNexis Practical Guidance, 2025; ABA Construction Industry commentary).

Workers’ compensation sits in its own statutory lane

Workers’ compensation (WC) is largely a state statutory system with mandatory benefits and exclusive-remedy features; federal programs (e.g., FECA) cover federal employees. Because the NRRA does *not* displace state WC placement rules, WC often must be written in the admitted market per state law, and waiver-of-subrogation or PNC notions work differently under WC statutes than under CGL.

Engineers should verify WC requirements for each state of operation, especially on multi-state projects and wrap-ups. (U.S. DOL OWCP; FECA; NAIC guidance; state DOIs).

Wrap-ups (OCIP/CCIP) and public guidance

Owner- or contractor-controlled insurance programs concentrate project risk financing. Public owners have published guidance on when wrap-ups are appropriate and how to structure them, including federal transportation guidance. Wrap-ups can simplify AI/PNC mechanics for enrolled parties but create gaps for excluded parties and for professional/pollution exposures if not expressly included.

Engineering teams should reconcile contract AI language with wrap-up manuals and verify completed-operations durations. (FHWA wrap-up guidance; IRMI commentary).

Ethics and professional responsibility when allocating risk

The legal system permits many risk-transfer arrangements; the professional codes put guardrails around their use. NSPE and ASCE require engineers to hold paramount public safety and act as faithful agents, which means refusing arrangements that obscure responsibility, over-promise insurance that does not exist, or mislead counterparties with certificates that cannot deliver coverage. Ethical practice therefore includes insisting on accurate endorsements and explaining statutory constraints to clients. (NSPE; ASCE).

Practice application: aligning a state DOT bridge project

A prime contractor on a state DOT bridge rehabilitation must post performance and payment bonds under the state's Little Miller Act and satisfy owner insurance requirements: AI (ongoing and completed ops), PNC, and waivers in favor of the DOT. The contractor's broker produces a COI listing the DOT as AI with 30-day cancellation notice.

The engineer of record advises the owner that, under state insurance code and ACORD 25 language, the COI cannot create AI status or cancellation notice, carrier endorsements are required.

The owner then requires CG 20 10 and CG 20 37 endorsements providing AI status for ongoing and completed operations and a PNC endorsement, plus a CG 24 04 waiver.

The bonding agent confirms that the surety is listed on Treasury Circular 570. Result: contract risk transfer aligns with statute, policy language, and ethical disclosure duties.

(State code; ACORD 25; Treasury Circular 570; NSPE; ASCE).

Conclusion

In U.S. practice, insurance is regulated by the states, coordinated by NAIC models, and bounded by federal procurement rules only in specific areas such as bonding for federal public works. Public owners rely on the Miller Act and Little Miller Acts for security; private owners rely on contracts and endorsements. Certificates are informational; endorsements and policy language do the actual legal work.

Additional insured, primary/non-contributory status, and waiver-of-subrogation must be created in the policy and may be limited by anti-indemnity statutes. Workers' compensation follows its own statutory path. Ethical duties require engineers to align client expectations with legal realities and to prevent "paper compliance" that fails at the claim stage. This framework underpins the policy-specific chapters that follow.

Chapter 3: Commercial General Liability (CGL) for Engineers



Policy architecture: Coverages A, B, C and limits

The CGL form CG 00 01 (e.g., 04/13 edition) is the industry's baseline general liability policy. Coverage A insures sums the insured is legally obligated to pay as damages because of bodily injury (BI) or property damage (PD), subject to the "occurrence" trigger and numerous exclusions. Coverage B insures personal and advertising injury (e.g., libel, slander, certain copyright infringement in ads) under its own insuring agreement and exclusions. Coverage C provides no-fault medical payments to third parties for minor injuries. Limits typically include a per-occurrence limit, a general aggregate, and a separate products-completed operations aggregate; defense is provided under "Supplementary Payments" and is usually outside the limits on primary policies (CG 00 01 04/13; state consumer guidance).

Table 7 shows how Coverage A manages physical harm to people and property; Coverage B manages enumerated communication offenses; Coverage C pays small medical expenses to third parties without requiring fault.

Table 7: The three coverage parts; engineering relevance

Coverage	Trigger (typical)	What it addresses	Why engineers care
A — Bodily Injury & Property Damage	"Occurrence" (accident) causing BI/PD during the policy period	Jobsite injuries, third-party property damage	Owner/third-party claims from construction means/methods, utility strikes, crane incidents
B — Personal & Advertising Injury	Offenses defined in policy	Libel/slander; wrongful eviction; certain copyright infringement in advertising	Marketing/promo content; website content; RFP materials
C — Medical Payments	No-fault within 1 year (typ.)	First-aid type expenses	Small incidents without litigation, goodwill on jobsites

“Occurrence,” claims-made contrasts, and products-completed ops

For Coverage A, the core trigger is *occurrence*, defined consistently across modern editions as “an accident, including continuous or repeated exposure to substantially the same general harmful conditions.” Occurrence policies cover BI/PD that *happens* during the policy period, even if a claim is made later. By contrast, a claims-made GL form (CG 00 02) responds when the claim is made and reported, subject to any retroactive date. The policy separately defines the *products-completed operations hazard*, which in turn ties to a separate aggregate limit and governs completed-work claims (CG 00 01 text; industry commentary).

The Coverage A exclusions that most often affect projects

Coverage A’s exclusions carve back what the insuring agreement would otherwise promise.

For engineers and constructors, several “business-risk” exclusions are pivotal:

- **Contractual liability** removes liability “assumed in a contract,” but *gives back* coverage for indemnity assumed in an “insured contract” (e.g., a construction agreement where the insured assumes the tort liability of another) and for liability the insured would have absent the contract. This is why the wording of the indemnity clause and the “insured contract” definition must align. (IRMI analyses; CG 00 01).
- **Damage to property - Exclusion j.** eliminates coverage for damage to property the insured owns, rents, occupies, or that is in the insured’s care, custody, or control (CCC); and for “that particular part” of real or personal property on which the insured (or its contractors) is working when the damage occurs (j(5)), or that must be repaired/replaced because “your work” was incorrectly performed on it (j(6)). Courts frequently litigate *that particular part*, which requires close fact analysis. (IRMI case commentary; IRMI webinar notes).
- **Your product / your work (k, l) and impaired property (m)** exclude repairing the insured’s own work or product and loss of use of property not physically injured arising from a defect; a subcontractor exception to “your work” can bring back coverage for completed operations in many forms. (CG 00 01).
- **Pollution** is broadly excluded under the standard GL form, pushing site pollution and jobsite environmental releases to separate contractors’ pollution liability or environmental policies. (Specimen GL forms).
- **Aircraft/auto/watercraft** shifts motor-vehicle exposures to auto policies; this often intersects with hired and non-owned auto requirements in contracts. (IRMI, 2022).
- **Professional services** are generally *not* a Coverage A grant and are commonly excluded for contractors by endorsement (e.g., CG 22 79; CG 22 80). Design firms should rely on A&E professional liability; contractors with design delegation should not expect the CGL to respond to design errors. (ISO endorsements; IRMI).

Table 8 shows high-impact Coverage A exclusions for engineering projects. These exclusions leave construction re-work and many design-related failures outside the CGL grant; align scopes, indemnity wording, and complementary policies accordingly.

Table 8: High-impact Coverage A exclusions for engineering projects

Exclusion (ISO ref.)	Practical effect on projects	Typical mitigation
Contractual liability (w/ "insured contract" carve-back)	If indemnity clause falls <i>outside</i> "insured contract," CGL will not back the promise.	Draft indemnity to fit "insured contract"; confirm carrier's definition.
Damage to property - j(5)/j(6) "that particular part"	No coverage to fix the part you're actively working on or incorrectly performed work; heavy litigation over scope.	QA/QC, clear scopes; completed-ops coverage for downstream resulting damage.
Your work / product; impaired property	No coverage to re-do your own defective work; limited give-back for subcontractor work in some forms.	Use warranty/retainage; ensure products-completed ops limits adequate.
Pollution	Most jobsite releases excluded from GL.	Separate contractors' pollution liability policy; project-specific if needed.
Professional services (endorsements)	CGL excludes engineering/architectural services by contractors or their subs.	Keep A&E PL in place; avoid inadvertently broad design duties.

Contractual liability, "insured contracts," and indemnity alignment

Engineering and construction contracts often require the contractor or design-builder to indemnify an owner for third-party BI/PD "arising out of" the work. The CGL's *contractual liability* exclusion would bar coverage for that promise *unless* the promise qualifies as an "insured contract" (i.e., the insured assumes the tort liability of another party to pay for BI/PD to a third person).

Two coordination points matter: first, an anti-indemnity statute may narrow the indemnity's scope; second, if the contract seeks defense of the indemnitee, confirm that the "insured contract" definition in the form (and any state-specific changes) treats defense costs as damages assumed. This alignment determines whether the CGL's contractual liability coverage finances the promised indemnity and defense. (IRMI detailed analyses). (IRMI, 2018; 2007; 2011/2013 updates).

Additional insured (AI), PNC, and waiver: how they really work

AI status is not automatic; it is created by endorsement. For construction, CG 20 10 (ongoing operations) and CG 20 37 (completed operations) are common ISO endorsements; the 1993 revisions separated ongoing from completed ops, and the 2013 editions further refined causation and limitation language.

Many AI endorsements cover the AI only for liability "caused, in whole or in part" by the named insured's acts or omissions, narrower than older "arising out of" language. Engineers added as AI via CG 20 32 should note that this endorsement

typically *excludes professional liability*, so it cannot replace professional liability coverage.

Primary and non-contributory status requires its own endorsement (e.g., CG 20 01 or bespoke wording) modifying the Other Insurance condition; a waiver of subrogation is still another endorsement (e.g., CG 24 04) and does not itself confer PNC. (IRMI analysis; ISO sample forms; municipal specimens). (IRMI, 2013/2018/2021; IRMI PNC; sample CG 20 10 04/13; sample CG 20 37 07/04; IRMI on AI for design professionals).

Separation of insureds (severability) and other insurance

The *Separation of Insureds* condition means the policy applies separately to each insured against whom a claim is made (subject to shared limits). This matters when an AI is sued by another insured's employee or where "cross-liability" issues arise.

Meanwhile, the *Other Insurance* condition determines priority when multiple policies could respond; on unendorsed ISO forms, the CGL is primary for the named insured's ongoing operations, but excess in specified circumstances, facts that can interact oddly with AI/PNC demands and with umbrella policies that do *not* "follow" the primary's Other Insurance clause. (IRMI severability/other-insurance analyses; ISO form). (IRMI, 2011; 2018; 2017; 2024).

Personal and advertising injury (Coverage B) and cyber carve-outs

Coverage B is often misunderstood: it responds to listed offenses (libel, slander, wrongful eviction, etc.) and has its own exclusions. Modern programs commonly endorse additional exclusions for data/tech exposures (e.g., CG 21 06 or CG 21 08 addressing access or disclosure of personal/confidential information), pushing cyber and media risks to separate policies.

Engineers should not expect Coverage B to respond to network security or data-privacy incidents associated with digital deliverables or OT/ICS integration. (IIAT Coverage B exclusion summaries). (IIAT, 2025).

Putting it together on a design-build job

Assume a design-builder (contractor-led) engages the Engineer of Record (EOR) as a subcontractor. The owner requires AI (ongoing and completed ops) and PNC for the owner and construction manager; the design-builder's CGL includes CG 20 10 and CG 20 37 naming the owner and CM as AIs and a CG 20 01 PNC endorsement.

The EOR remains responsible for its professional services under A&E professional liability; the design-builder's CGL also carries CG 22 79, excluding professional services by or on its behalf. A pier-caps formwork collapse injures a third-party inspector and damages adjacent property. The owner and CM tender as AIs; the CGL responds to their vicarious-liability exposure subject to Coverage A, while re-work to the formwork itself is barred by j(6) and "your work." The EOR's PL responds if a design error contributed. Contractual liability coverage applies to indemnity obligations that qualify as an "insured contract." (ISO forms; IRMI analyses).

Alignment between contract language and actual endorsements avoids "paper compliance" that fails on tender (Table 9).

Table 9: Checklist - engineering documents vs. CGL reality

Document demand	What to obtain and check	Why it matters in claims
"Name Owner and CM as AI (ongoing + completed ops)"	CG 20 10 and CG 20 37 issued by the carrier; confirm "caused, in whole or in part" wording and scheduled parties	Ensures both construction-phase and post-completion claims are contemplated
"Provide PNC"	CG 20 01 or manuscript PNC modifying Other Insurance; confirm umbrella behavior	Prevents the AI's policy from sharing/eroding before the named insured's CGL responds
"Indemnify and defend Owner"	Indemnity drafted to fit "insured contract" definition; confirm defense-as-damages treatment	Aligns CGL contractual liability with promised defense/indemnity
"COI showing 30-day cancellation notice"	Carrier-issued endorsements; do not rely on a certificate alone	Certificates do not amend coverage

Common misconceptions and corrective guidance

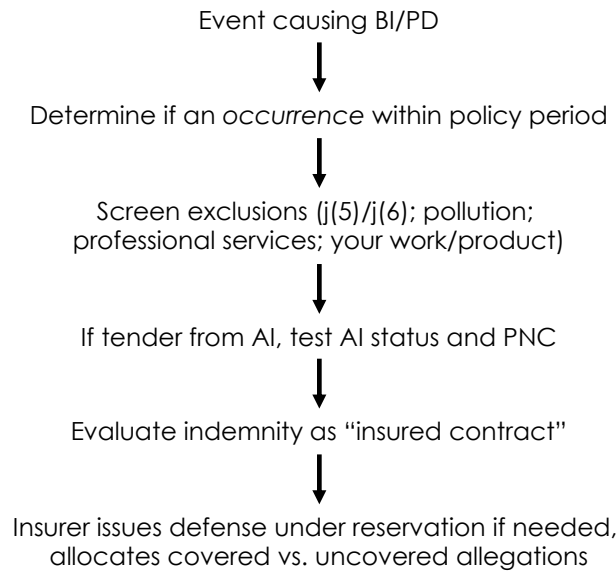
First, AI endorsements rarely make the AI's insurance "never respond." *Non-contributory* does not mean unlimited; it only sets priority if other valid and collectible insurance exists for the AI.

Second, a waiver of subrogation (CG 24 04) prevents the insurer from seeking recovery against waived parties; it does not create AI status or PNC.

Third, the CGL is not a performance bond or warranty; the business-risk exclusions keep most re-work out of scope.

Fourth, adding an engineer as AI via CG 20 32 does not import professional liability, those exposures require A&E PL coverage. (IRMI PNC and AI notes). (IRMI, 2018; 2021; 2009–2014 series).

The pathway in Figure 3 shows why early fact development around *what part* was damaged, *who did the work*, and *what endorsements apply* materially changes the coverage outcome.



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Figure 3: Claim pathway and allocation (Coverage A)

Conclusion

For U.S. engineering practice, the CGL is the principal third-party liability backstop for bodily injury and property damage arising from construction and site activities, with Coverage B handling a narrow set of advertising/personal injury offenses and Coverage C addressing minor medical payments. The policy's exclusions, especially contractual liability (with the "insured contract" carve-back), damage-to-property j(5)/j(6), your work/product, pollution, and professional services endorsements, shape the true contour of protection.

Contract demands for AI, PNC, and waivers must be operationalized with the correct endorsements, and separation of insureds and other insurance conditions govern priority and cross-liability. Engineers should pair precise contract drafting with fit-for-purpose endorsements and complementary policies (A&E professional liability, contractors' pollution, auto, umbrella) to avoid systematic coverage gaps and to ensure tenders are honored at the claim stage.

Chapter 4: Professional Liability (E&O) and Project-Specific Coverage



What A&E professional liability covers (and why it is claims-made)

A&E PL insures the firm for civil liability arising from negligent acts, errors, or omissions in the rendering of professional services (e.g., design, specification, analysis, contract administration). Unlike general liability's focus on bodily injury or property damage, A&E PL extends to purely economic loss where permitted by law and by the policy definition of "damages," which is why the coverage is almost universally written on a *claims-made* basis (IRMI, n.d.).

On a claims-made policy, coverage is triggered when a claim is first made against the insured and reported to the insurer during the policy period, subject to any retroactive date that limits how far back acts may have occurred (NAIC, 2025; IRMI, n.d.).

Core mechanics: retroactive dates, prior acts, and extended reporting periods

The *retroactive date* (also "prior acts" date) eliminates coverage for claims arising from acts before that date, even if the claim is made during the policy term; some policies grant *full prior acts* with no retro date (IRMI, n.d.).

If coverage is terminated or a firm retires, an *extended reporting period* (ERP or "tail") permits claims to be reported after expiration for acts that occurred before policy end. ERPs may be automatic and short (e.g., 30–60 days) or optional and long (e.g., multiple years) for additional premium; the business reason is that professional services often have long discovery lags (IRMI, n.d.; Investopedia, 2015).

Timely notice is part of the trigger; failing to report a claim (or a properly framed "notice of circumstance") within the period can nullify coverage under claims-made forms (Reed Smith, 2012). (IRMI, n.d.; Investopedia, 2015; Reed Smith, 2012).

Figure 4 is an example of a claims made timeline for an engineering firm. Because the retro date (2018) precedes the work, and an ERP extends reporting into 2029, the

2026 claim can attach to the last policy as long as notice is within the ERP and no other exclusions apply.

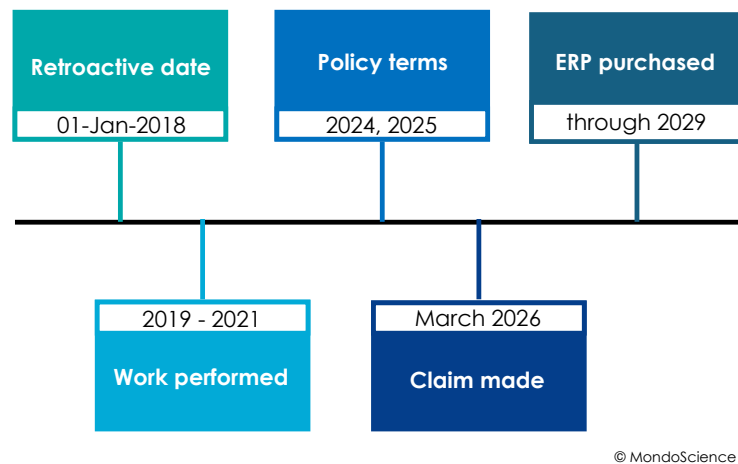


Figure 4: Claims-made timeline for an engineering firm.

Defense, limits, deductibles/retentions, and consent-to-settle

Most A&E PL policies include *defense within limits* (also called “burning limits”), meaning defense expenses erode the same limit available to pay damages. Complex disputes can therefore consume limits quickly, which weighs in favor of higher limits on large jobs or supplemental project-specific structures (IRMI, n.d.; IRMI, 2023). Deductibles or self-insured retentions apply per claim and may be sizeable relative to CGL deductibles.

Many forms include a *consent-to-settle* clause: the insurer seeks the insured's consent before settling; a “standard hammer” may cap the insurer's obligation at the recommended amount if the insured refuses, whereas a “coinsurance hammer” shares overage to soften the penalty (IRMI, 2019; IRMI, 2017). Some PL forms are “indemnity only” (no duty to defend); others include a defense obligation—firms must read the insuring agreement and conditions carefully (Phelps Dunbar, 2020).

Claims-made triggers, defense-within-limits, and hammer provisions are the levers that most change outcomes for design firms; disciplined notice and continuity management are essential (Table 10).

Table 10: A&E professional liability - features that drive claim outcomes

Feature	Typical A&E PL treatment	Practical implication
Trigger	Claims-made and reported; tied to retro date	Maintain continuity; avoid advancing the retro date during carrier changes (NAIC, 2025; IRMI, n.d.).
Defense	Defense <i>within</i> limits (eroding)	Budget for expert-heavy disputes; consider higher limits or project solutions (IRMI, 2023).
Settlement control	Consent-to-settle with “hammer” or “coinsurance hammer”	Decide in advance how much settlement discretion you want (IRMI, 2019; IRMI, 2017).
Notice	Claim or circumstance must be reported per policy	Late notice can defeat coverage; document NOC submissions (Reed Smith, 2012; WTW, 2024).
Deductible/SIR	Higher than CGL; applies to defense and indemnity	Cash-flow plan for retentions on multi-count claims (IRMI, 2012; IRMI, 2019).

What counts as “professional services,” and vicarious liability for subconsultants

Coverage turns on the policy’s definition of “professional services.” A&E PL typically embraces services an engineer is legally qualified to perform (e.g., analysis, design, specification, surveying, construction administration), but excludes faulty construction means and methods unless expressly endorsed (IRMI, n.d.).

Most A&E PL policies insure the prime consultant’s *vicarious liability* for the negligent professional acts of subconsultants, but they do not defend or indemnify the subconsultant itself; each subconsultant should carry its own PL with compatible retro dates and limits (IRMI/CNA program guidance). Contract exhibits should therefore require subconsultant PL, continuous retro dates, and cooperation on notices of circumstance (IRMI, n.d.; Professional Underwriters, 2019). (IRMI, n.d.; Professional Underwriters, 2019).

Contract coordination: indemnity, duty-to-defend demands, and AI misunderstandings

Owners sometimes insert “defend, indemnify, and hold harmless” provisions untethered to professional negligence. Because A&E PL covers damages caused by the insured’s professional negligence, a pre-tender *duty to defend the owner* for any and all claims may be uninsured (ACEC, 2025; Phelps Dunbar, 2020).

Modern AIA owner–architect forms typically require the owner to be an additional insured on the architect’s *general liability*, not on professional liability, reflecting market practice that PL does not offer AI status (AIA B101 commentary; DesignBuildLaw note, 2022). Certificates of insurance remain evidentiary only and cannot amend PL terms; endorsements and policy text control (NAIC, 2025, certificate guidance addressed in Chapter 2). (ACEC, 2025; Phelps Dunbar, 2020; AIA/DesignBuildLaw, 2022).

Project-specific solutions: PSPL, OPPI, and CPrL

- **Project-Specific Professional Liability (PSPL).** A PSPL policy insures the design team for a defined project, commonly in design-build or large, complex works. Defense typically erodes limits, and premiums are significant because PSPL replaces (or sits primary to) practice PL for the project term and completed-operations window. The structure can address multi-party design teams and mandate consistent terms, but requires careful coordination with underlying practice programs to avoid limit stacking or gaps (IRMI, 2023).
- **Owner's Protective Professional Indemnity (OPPI).** OPPI is *first-party* protection for the owner: it reimburses the owner for damages arising from design professional negligence in excess of the DPs' available PL, and many modern OPPI forms include a separate defense component for third-party claims against the owner (IRMI, 2008; IRMI, 2019; CRC Group, 2024). OPPI layers above the design professionals' practice PL and helps owners avoid dependence on numerous firm-specific practice policies (IRMI, 2012; IRMI, 2019).
- **Contractors Professional Liability (CPrL).** When constructors assume design obligations (e.g., design-build, delegated design), CPrL insures their professional services liability and often adds two notable modules: *protective indemnity* (first-party, excess over DP PL) and *rectification/mitigation* (first-party costs to redesign/repair a discovered design defect before third-party damage occurs). CPrL is always claims-made; defense costs typically erode limits (IRMI, 2012; IRMI, 2019; IRMI, 2011/2017/2023).

Table 11 shows how practice PL protects the design firm; PSPL centralizes project design risk; OPPI gives the owner excess protective and defense; CPrL covers contractor design risk and fills the preventive "rectification" gap.

Table 11: Practice PL vs. PSPL vs. OPPI vs. CPrL - who is insured and what problem it solves

Structure	Named insureds	What it pays for	Where it fits best
A&E Practice PL	The design firm (prime) and typically its vicarious liability for subs	Defense + damages for the firm's professional negligence (claims-made)	Everyday operations; all projects unless superseded by project-specific terms (IRMI, n.d.).
PSPL	Project design team (as scheduled)	Defense + damages for project professional negligence; replaces/sits primary to practice PL for that project	Large/complex projects or where owner/DB demands uniform terms (IRMI, 2023).
OPPI (Owner's Protective)	Owner (and sometimes DB/CM per form)	First-party "protective" indemnity above DP PL; often separate third-party defense for owner	Owners seeking dedicated limits beyond many DPs' practice policies (IRMI, 2008; IRMI, 2019; CRC Group, 2024).
CPrL (with Protective + Rectification)	Contractor/DB for its professional services; protective sits excess over DPs	Third-party PL; first-party protective indemnity; first-party rectification/mitigation	Design-build or delegated design where contractor bears design risk (IRMI, 2012; 2019; 2017/2023).

Rectification/mitigation and protective indemnity: closing the “no-claim yet” gap

Rectification (sometimes “mitigation of loss”) pays the insured’s costs to redesign and replace defective work discovered before third-party injury or property damage occurs and before a formal claim is made; this can drastically reduce total loss severity and schedule impact when a design error is caught mid-construction. It is typically a *primary* first-party coverage within CPrL or project CPrL; it requires prompt notice and insurer consent (IRMI, 2011; IRMI, 2017; IRMI, 2023).

By contrast, *protective indemnity* reimburses the insured (owner or contractor) for damages they suffer from a DP’s negligence *in excess* of the DP’s available PL limits (IRMI, 2019; IRMI, 2024).

Reporting discipline: “circumstances,” mergers, and continuity

Most PL forms allow reporting a *circumstance* that may give rise to a claim; doing so can lock that circumstance to the current policy period, which protects continuity if a later claim arrives after renewal. Policies vary in how precisely a circumstance must be described and what expenses are covered before a claim is made; many carriers offer “pre-claim assistance” programs to help manage sensitive project issues before they become claims (WTW, 2024; AXA XL, 2025).

Firms that merge, acquire, or spin off practices must examine “prior knowledge” conditions, predecessor firm definitions, and the treatment of acquired entities to avoid unintentional retro date advances or warranty breaches at binding (IRMI, 2019). (WTW, 2024; AXA XL, 2025; IRMI, 2019).

Statutes of repose and project duration planning

State statutes of repose can bar claims after a fixed number of years from substantial completion, regardless of discovery; these periods vary materially by state. Tail strategies for retirement, firm closure, or long-duration infrastructure should therefore be benchmarked against the controlling repose statute to reduce uncovered “long tail” risk (NSPE, n.d.; SDV, 2024).

Putting it to work - design-build water treatment project (illustrative)

A design-builder retains a multi-firm design team for a water treatment upgrade. The owner requires uniform professional terms and evidence of dedicated limits. The team adopts a PSPL with a 10-year completed operations window matched to the state’s repose period, while the owner purchases an OPPI layer for protective indemnity and defense above the designers’ practice PL. The design-builder carries CPrL with rectification to address discovered design errors during construction.

Contract indemnity is limited to negligence, and the owner drops an unconditional duty-to-defend demand after counsel confirms it is unlikely to be insured under A&E PL. The program is set to preserve retro dates during a mid-project team merger, with formal “notice of circumstance” procedures and pre-claim protocols agreed in the coordination manual (IRMI, 2012; IRMI, 2019; IRMI, 2023; ACEC, 2025; Phelps Dunbar, 2020).

Subconsultant PL vetting must extend beyond certificates to policy features that determine whether coverage will actually respond (Table 12).

Table 12: Subconsultant PL compliance - what to collect and why

Requirement	Why it matters	Documentation to obtain
PL limits consistent with role/risk	Defense-within-limits means erosion; use adequate per-claim and aggregate limits	Policy declarations; not just a certificate (NAIC, 2025 - COI limits)
Retro date at or before subconsultant's first project service	Avoids gaps for early design work	Endorsement or policy page showing retro date (IRMI, n.d.)
Vicarious liability alignment	Prime's PL usually covers only prime's vicarious exposure; subs need their own PL	Sub's policy copy or certificate plus retro evidence (Professional Underwriters, 2019)
Notice & pre-claim coordination	Early "circumstance" reporting preserves coverage	Contractual protocol aligned to PL notice clauses (WTW, 2024)

Conclusion

Professional liability is the engineer's core financial backstop for design error and other professional negligence, distinct from general liability, because it responds to economic loss and is written on a claims-made chassis. Outcomes hinge on continuity of the retroactive date, diligent claim or circumstance reporting, defense-within-limits budgeting, and consent-to-settle terms.

On complex or alternative-delivery projects, project-specific structures offer different solutions to different problems: PSPL centralizes design-team coverage; OPPI protects owners above practice policies (and can furnish dedicated defense); and CPRl insures design risk borne by contractors while adding protective and rectification features. Aligning these instruments with contract indemnity language, realistic duty-to-defend obligations, subconsultant requirements, and statutes of repose reduces uninsured surprises and improves claim resolution certainty.

Chapter 5: Property and Construction-Centric Coverages (Builders Risk, Inland Marine, Workers' Compensation, and Commercial Auto)



Builders risk (contract works): what it covers and who should buy it

A builders risk policy insures direct physical loss or damage to the “work” while a project is under construction, typically on an “all risks” basis with project-specific endorsements; there is no single standard form, and most policies are written as inland-marine (non-filed) coverage rather than as standard commercial property (IRMI). That non-filed status is why manuscript wording varies widely across carriers and jurisdictions (IRMI; AIMU/AAS guidance).

In contemporary practice, owners or their lenders usually require builders risk, and AIA A201-2017 places the primary obligation on the Owner to purchase property insurance “for the entire Work at the site on a replacement cost basis,” with a corresponding waiver of subrogation among project participants (AIA A201 §11.3). Engineers advising owners should verify sublimits (temporary works, testing, debris removal), perils (flood/quake where relevant), and the waiver/protective provisions in §11.3 across all contracts and any wrap-up programs. (IRMI, 2011–2025; AIA, 2017).

Table 13 below compares builders risk with CGL and installation floater. Builders risk insures the *thing being built*; CGL insures liability to others; an installation floater insures a sub-trade's materials/equipment in transit, storage, and during installation.

Table 13: Builders risk compared with CGL and installation floater (scope and use)

Feature	Builders risk (contract works)	CGL (third-party liability)	Installation floater (sub-trade property)
Core grant	Direct physical loss to the work (materials, fixtures, temp works)	Liability for BI/PD to others	Direct physical loss to materials/equipment being installed by a contractor
Named insureds	Typically owner; often GC and subs included for property interests	Named insured + additional insureds for liability only	Usually the installing contractor; others only if scheduled or required
Typical term	From site mobilization to completion/acceptance (with permission-to-occupy provisions)	Annual	Job-specific or reporting; ends at acceptance
Frequent add-ons	Testing, soft costs/Delay in Start-Up (DSU), expediting expenses	AI/PNC; waiver of subrogation	Transit, off-site storage, testing

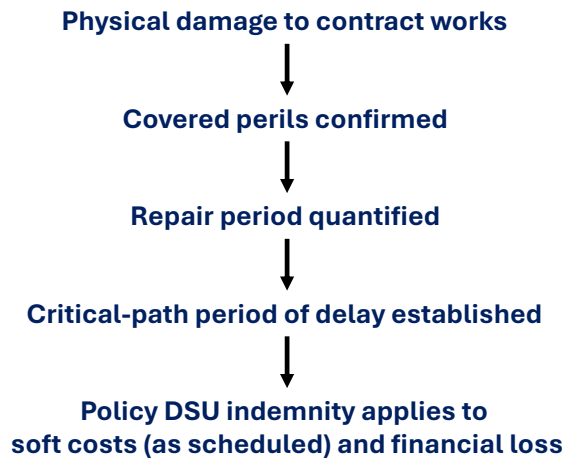
Delay in Start-Up (DSU) and soft costs: why wording and named insureds matter

Delay coverage (also called DSU, delayed completion, or advance loss of profits) reimburses financial loss from *time* lost due to insured physical damage to the works; it commonly indemnifies the owner for lost rental value, gross earnings, and specified soft costs such as extended general conditions, interest carry, professional fees, and advertising (IRMI; Marsh).

DSU/soft-cost coverage is not automatically extended to contractors and is often reserved to owners (and lenders) because the insured interest is the project's economic stream rather than property owned by the builder; mis-naming insureds is a frequent cause of denials (IRMI).

Engineers should align DSU triggers and measurement (critical path delay analysis) and ensure testing/break-in perils are not excluded where commissioning risk is material. (IRMI, 2021–2025; Marsh, 2022–2024).

Figure 5 shows a DSU trigger chain where DSU pays for *time* lost due to covered property damage; forensic schedule analysis links damage to delay.



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Figure 5: DSU trigger chain.

Inland marine floaters: installation and contractors' equipment

Inland marine policies protect movable or project-specific property that falls outside ordinary fixed-location property insurance. The two floaters engineers most often encounter are the **installation floater**, which covers property a contractor is installing (including transit and temporary storage until acceptance), and the **contractors' equipment floater**, which covers mobile equipment and tools that move from site to site (IRMI).

Installation floaters are often written on the same chassis as builders risk but focus on a sub-trade's insurable interest; equipment floaters may be ISO or AAIS program forms with tailored conditions (e.g., scheduled/blanket equipment, rented-from-others, theft safeguards, flood/quake buy-backs) (IRMI; AAIS; ISO/Verisk).

Engineering teams should confirm where coverage "cuts over" from an installation floater to builders risk, because "other insurance" clauses and duplicate coverage can create priority disputes if both apply to the same property in the same time window (IRMI). (IRMI, 2011–2025; AAIS/ISO program notes).

Table 14 illustrates how floaters are narrower and interest-specific; builders risk is project-global; coordination avoids gaps or double insurance.

Table 14: Installation vs. contractors' equipment floaters - decision cues

Question	If "yes," lean toward...	Why
Is the exposure <i>materials or equipment being installed</i> and not yet accepted?	Installation floater	Covers the specific materials in transit, storage, and while installing
Is the exposure <i>movable gear</i> the contractor owns/borrows and uses on many jobs?	Contractors' equipment floater	Covers cranes, loaders, small tools, and rented-from-others
Is there a project builders risk in force covering the same exposure?	Coordinate both	Avoid "other insurance" collisions; decide primary/excess by endorsement

Builders risk in standard forms and wrap-ups (OCIPs/CCIPs)

Standard contract families embed property-insurance expectations. AIA A201-2017 requires the owner to carry builders risk and to maintain a waiver of subrogation among project participants; it also addresses partial occupancy/permission-to-occupy, which can change risk allocation unless the policy is endorsed accordingly (AIA A201).

On projects insured under owner- or contractor-controlled insurance programs, builders risk and enrolled parties' property interests are centralized; participants must understand deductibles, testing endorsements, DSU/soft-cost scopes, and how the wrap interacts with corporate floaters (IRMI; Chubb; AGC).

Engineers can materially reduce claim friction by ensuring the insurance exhibit and the wrap manual agree on named insureds, DSU beneficiaries, and the "permission to occupy" plan before substantial completion. (AIA, 2017; IRMI; Chubb, 2021; AGC, 2023).

Workers' compensation and employers' liability: statutory lane, classification, and EMR

Workers' compensation (WC) provides the statutory, "exclusive remedy" benefits for job-related injury or illness; employers exchange fault-based defenses for a predictable benefit schedule. Employers' liability (Part Two) protects against suits *outside or in addition to* WC benefits (e.g., third-party-over, dual-capacity), and it is commonly bundled with WC except in monopolistic states (NAIC; NCCI standard form WC 00 00 00 C; California DOI guidance).

WC rating hinges on accurate *classification* of work and payroll, state-specific rules, and, once eligible, an **experience modification rate (EMR)** that compares an employer's loss experience to expected losses for its peer group.

NCCI's "ABCs of Experience Rating" explains how actual vs. expected losses are split and weighted to emphasize frequency over severity; EMR <1.00 credits premium, >1.00 debits (NCCI). For multi-state engineering firms, the policy's Item 3.C. "Other States Insurance" and state extraterritorial provisions must be managed proactively when projects cross state lines. (NAIC, 2024–2025; NCCI, 2015–2025).

Example of how EMR affects WC premium (illustrative):

Manual premium × EMR (e.g., 0.82 credit vs 1.12 debit) = experience-rated premium.

Because EMR weights claim **frequency** heavily, disciplined reporting, return-to-work, and tight subcontractor controls are crucial to avoid small, frequent losses that inflate the modifier (NCCI).

EMR is a performance multiplier: safety and claim management change premium dollars disproportionately.

Monopolistic states and “stop-gap” employers’ liability

In Ohio, North Dakota, Washington, and Wyoming, WC must be purchased from the state fund and **employers’ liability is not included** in the fund policy. Firms with exposures in those states typically add *stop-gap* employers’ liability by endorsement, either to their general liability or to their WC policy. This covers non-monopolistic states, so that employee suits outside the statute are insured (state agency guidance and industry primers). Engineers planning work in these jurisdictions should confirm the stop-gap arrangement and limits before mobilization. (WA DES; Insureon/Nixer summaries; AALS commentary).

Injury-rate benchmarks and project delivery implications

BLS reports a 2023 private-industry total recordable case (TRC) rate of **2.4** per 100 FTEs, with construction sectors above or below that average depending on trade. These benchmark rates inform prequalification, owner safety specs, and WC pricing in experience-rated accounts; they also appear in wrap-up safety KPIs. Engineers can leverage these statistics to set safety targets and to forecast EMR trajectories following project clusters. (BLS/OSHA).

Commercial auto for engineering and construction fleets: core form and federal overlays

The ISO Business Auto Coverage Form **CA 00 01** is the primary instrument for auto liability and physical damage in U.S. commercial practice. Coverage attaches only to “covered autos” designated by symbols in the declarations—practically, Symbol **1** (Any Auto) is the broadest; where Symbol 1 is unavailable, firms usually combine Symbol **2** (Owned), **8** (Hired), and **9** (Non-Owned) to approximate broad protection (ISO form; IRMI).

Design teams and CMs often face **hired and non-owned** exposures: staff renting cars or using personal vehicles on company business. Two ISO endorsements commonly tighten gaps, **CA 20 54 (Employee Hired Autos)** and **CA 99 47 (Employee as Lessor)**, which extend insured status and can make coverage primary for employee-rented or employee-owned autos specifically listed (IRMI; FC\&S).

For motor carriers subject to federal financial-responsibility rules, the **MCS-90** endorsement (49 CFR Part 387) is a statutory overlay that guarantees payment to the public, distinct from and broader than policy grant language, and must be understood in tandem with contractual insurance requirements. (ISO CA 00 01; IRMI; ECFR/LII; FC\&S).

The declarations page (symbols), targeted endorsements, and any required federal filings determine real-world auto coverage at claim time (Table 15).

Table 15: Commercial auto—high-leverage checkpoints for project teams

Checkpoint	What to verify	Why it matters
Covered-auto symbols	Symbol 1 (preferred) or 2/8/9 combination; physical-damage where required	Wrong symbols leave hired/non-owned gaps that contracts won't forgive
Hired/non-owned endorsements	CA 20 54 for employee-rented vehicles; CA 99 47 for employee-owned vehicles leased to firm	Establishes insured status and priority—critical for rentals and allowances
Federal filings	MCS-90 (where required) and financial-responsibility amounts	Statutory override of policy defenses for public protection; non-compliance is a stop-work risk

Practical alignment, tying property, marine, WC, and auto into one spec

On a state university lab renovation, the owner requires builders risk (owner-purchased, replacement cost, flood/quake included), DSU/soft costs for the owner only, and a waiver of subrogation consistent with AIA A201 §11.3. MEP subcontractors carry installation floaters for long-lead equipment through acceptance; the GC's contractors' equipment floater covers cranes and hoists with theft safeguards.

The wrap-up provides WC for on-site operations; the EOR verifies classifications and "other states" entries for off-site engineers fabricating specialty assemblies in a neighboring state, and the broker models the project's effect on EMR over the next three policy years.

The CM requires CA 00 01 with Symbol 1 or 2/8/9, CA 20 54 for rentals, and MCS-90 filings for the rigging hauler. The result is coherent property and casualty protection with clear boundaries for time-related loss, mobile assets, employee injury, and road exposure (AIA A201; IRMI; NCCI; ECFR).

Conclusion

Builders risk insures the evolving **work**; installation and contractors' equipment floaters insure the **stuff that gets it built**; workers' compensation and employers' liability protect **people**, and commercial auto protects **movement**. The technical art is alignment: name the right insureds (especially for DSU/soft costs), reconcile floaters with builders risk to avoid "other insurance" fights, maintain WC classification integrity and EMR discipline, and set auto symbols and endorsements to reflect actual fleet behavior and federal obligations. When engineers ensure that insurance exhibits, wrap manuals, and policy documents agree up front, the claim pathway later will be shorter, clearer, and far less expensive.

Chapter 6 — Design-Build, Delegated Design, and Bonding (Bid, Performance, Payment, and Specialty Bonds)



Design-build and delegated design continue to expand across U.S. public and private markets. For licensed engineers, that growth changes how risks move through contracts, how sureties underwrite and respond to default, and how project teams must coordinate design responsibility.

This chapter explains the mechanics and practical implications of design-build and delegated design, then connects them to the core contract bonds (bid, performance, and payment) and the principal specialty bonds engineers encounter in practice. It closes with claim workflows under the AIA A312 performance bond, differences between subcontract bonds and subcontractor default insurance, and underwriting concepts engineers should understand to plan work, negotiate terms, and preserve remedies.

Design-build in brief: contractual architecture and risk transfer

Design-build (DB) consolidates design and construction obligations into a single contract with the owner. The DB entity (often a contractor-led team) accepts responsibility to meet the owner's performance criteria, while managing and integrating the design professionals and trade partners.

DBIA's "Design-Build Done Right®" best practices emphasize early definition of performance requirements, clear risk allocation, qualifications-based team selection, and collaborative design management to avoid scope gaps and price/schedule shocks downstream (DBIA, 2023).

In DB, the performance bond normally secures all obligations in the design-build agreement—not just physical construction—because the bond follows the contract it guarantees (ConsensusDocs, 2021; AIA Contract Documents, 2024; ABA, 2022).

Delegated design: what it is and how to do it safely

Delegated design occurs when the prime design professional or the owner expressly assigns responsibility for the final design of a discrete system to the contractor or a

specialty designer, using performance criteria and submittal requirements stated in the contract documents. Industry guidance stresses: write explicit performance/design criteria; require engagement of appropriately licensed professionals; define submittal, review, and approval steps; and document the limits of the Engineer-of-Record's (EOR's) review (AIA Contract Documents, 2022; AIA Contract Documents, 2024).

EJCDC C-700—2018 §7.19 sets out a widely used framework: it permits owner-delegated professional design services, requires the contractor to procure licensed design services for the delegated portion, and limits the EOR's review of delegated-design submittals to consistency with the performance/design criteria without assuming responsibility for the delegated engineer's work (EJCDC, 2018; Obeirne/EJCDC, 2022).

How bonding interacts with design risk

A performance bond is a three-party instrument (obligee/owner, principal/contractor, and surety). It guarantees the principal's performance of the underlying contract. In design-build, that contract includes design obligations; therefore, the surety's obligation is co-extensive with the principal's contractual duties, subject to the bond's text and penal sum.

Courts and commentators consistently remind obligees to “follow the bond”: the surety's liability is governed by the bond language and conditions precedent (notice, termination, tender rights, etc.). Under AIA A312-2010 §5, once the obligee satisfies §3's notice/default conditions, the surety must elect one of several options with reasonable promptness (arrange completion by the principal; take over; tender a completion contractor; or pay/deny) (AIA Contract Documents, 2010; ABA, 2022; IADC, 2021/2023). The A312 also expressly recognizes responsibility for certain “design professional and delay costs” resulting from contractor default and the surety's actions under §5 (AIA Contract Documents, 2021).

Regardless, professional liability insurance remains essential; a performance bond is not a professional liability policy, and recovery for design negligence will depend on the contract, bond, and applicable law (Smith Currie, 2015; ABA, 2022).

Core contract bonds: purpose, triggers, and typical terms

Bid bonds. A bid bond provides financial protection if the selected bidder refuses to enter the contract or furnish required final bonds. Penal sums commonly range from 5% to 20% of the bid, depending on statute and procurement policy (NASBP, 2018; FAR Subpart 28.101, 2025). Federal guidance allows bid guarantees only when performance and payment bonds are also required (FAR 28.101-1, 2025).

- **Performance bonds:** A performance bond secures completion per the contract. Under AIA A312-2010, the obligee must give notice that it is “considering declaring default,” allow a conference if requested, declare default, terminate, and agree to pay the balance of the contract price—all before the surety's duties ripen. If the obligee skips steps (e.g., hires completion without giving the surety its §5 options), courts can find the bond was not triggered (AIA Contract Documents, 2010; IADC, 2021/2023; ABA, 2022). Many A312 bonds contain a suit-limitation clause (often two years

measured from specified events). Parties should check the specific form (THSH, 2024).

- **Payment bonds:** Payment bonds protect covered claimants (typically first-tier subcontractors and suppliers, and others as defined) against nonpayment. On federal projects, payment bonds implement the Miller Act; claimants must follow statutory notice and suit deadlines (LII, 40 U.S.C. §§3131-3133, 2025; ABA, 2022).

Table 16 shows that each bond protects a different risk and has different procedural triggers; failure to follow the correct trigger sequence can forfeit coverage.

Table 16: Contract bond types, what they guarantee, and typical triggers

Type	What it guarantees	Common trigger(s)	Illustrative source
Bid bond	Bidder will enter contract and furnish required final bonds at its bid price	Bidder won but refuses to sign or post bonds	FAR 28.101-1; NASBP (2018)
Performance bond	Completion per contract terms	Proper notice, declaration of default, termination; then surety elects §5 option	AIA A312-2010; ABA (2022)
Payment bond	Payment to covered claimants for labor and materials	Unpaid claim; statutory/bond notice and filing deadlines	40 U.S.C. §§3131-3133; ABA (2022)

Specialty bonds engineers encounter

Maintenance/Warranty bonds. Secure correction of defects during the warranty period; sometimes separate from, or in addition to, performance bonds (NASBP, 2025; Commercial Surety Bond Agency, 2021).

- **Supply bonds:** Guarantee delivery of specified materials or equipment per contract (NASBP, 2018).
- **Subdivision/plat bonds:** Guarantee installation of public improvements required by local authorities as a condition of plat approval (industry practice summaries; Integrity Surety, 2024).
- **License/permit/right-of-way bonds:** Required by agencies for certain activities (e.g., street openings, encroachments) (industry practice summaries).
- **Lien-release (discharge/transfer) bonds:** Allow an owner or contractor to “bond off” a recorded mechanic’s lien, substituting bond security for the encumbered property; amounts and procedures are state-specific (e.g., GA, AZ, FL)

Bond forms and selection: AIA, EJCDC, ConsensusDocs

AIA A312 (2010) remains widely used; its instructions and §5 options are well-litigated. It builds in obligee-surety conferences, enumerated completion options, and limitations periods (AIA Contract Documents, 2010/2024; IADC, 2021/2023).

EJCDC offers C-610 (performance) and C-615 (payment) aligned to its C-700 general conditions; the 2018 EJCDC suite also coordinates delegated design clauses

(§7.19) with submittal review limits to avoid unwittingly shifting design responsibility back to the EOR (EJCDC, 2018; EJCDC Product Page, 2018).

ConsensusDocs offers alternative bond forms with differing triggers. Engineers involved in procurement should align the bond form with the general conditions and the project's delivery method (ConsensusDocs, 2021; EJCDC Commentary, 2019).

Who can issue bonds? Treasury listing and state admission

On federal projects, sureties must appear on the U.S. Department of the Treasury's Circular 570 list of certified companies; agencies may reject bonds from non-listed sureties. Circular 570 is updated regularly and cross-referenced in 31 C.F.R. §223.16 (U.S. Treasury, 2025; eCFR 31 C.F.R. §223.16, 2025). State and local owners also typically require sureties to be admitted in the project's state (NASBP, 2018).

A312 performance bond claim workflow - what actually happens

A typical A312-2010 claim proceeds as follows (see also Figure 6):

- The owner sends a §3.1 notice that it is considering declaring default to both contractor and surety; a conference may be requested within 10 business days.
- If unresolved, the owner declares default, terminates, and agrees to pay the balance of the contract price (§3.2–§3.3).
- The surety then elects an option under §5 and must proceed with reasonable promptness.
- Failure by the obligee to follow this sequence can be fatal to coverage.

Figure 6 shows the order and decision points required by the A312 bond; skipping steps can void recovery.



Figure 6: AIA A312-2010 performance bond; high-level claim flow

Table 17 highlights that A312 gives the surety, not the owner, the choice among completion options once conditions precedent are met.

Table 17 Surety options at default (AIA A312-2010 §5)

Option	What it looks like in practice	Notes
Arrange for the contractor to complete	Surety finances or otherwise supports the original principal to finish	Often used when default is curable (AIA A312 §5.1; ABA, 2022)
Surety takeover	Surety hires/completes via its agents/subs	Requires new bonds from completion contractor (AIA A312 §5.2; AGC, 2014)
Tender a completion contractor	Surety procures bids and tenders a replacement acceptable to the owner	Owner contracts directly; surety pays overrun above remaining balance (AIA A312 §5.3; AGC, 2014)
Pay/deny	Surety pays determined liability or denies, citing reasons	Denial triggers litigation/arbitration timelines (AIA A312 §5.4; IADC, 2021/2023)

Co-obligee riders and additional obligees

Owners sometimes seek to be added to a subcontract performance bond as a co-obligee. Courts have held that additional obligees are bound by the bond's conditions precedent; failure to comply can bar recovery (AIA Contract Documents, 2023). NASBP cautions owners not to rely on a stack of subcontract bonds with co-obligee riders as a substitute for prime bonds; prime bonds uniquely cover the entire prime contract (NASBP, 2025b).

Subcontractor bonds vs Subcontractor Default Insurance (SDI)

SDI is a two-party first-party insurance product purchased by the general contractor; it shifts prequalification to the GC, introduces deductibles/co-pays, and typically costs less than requiring bonds from multiple subs, but it lacks the surety's prequalification and third-party performance guarantee to the owner. NASBP and SFAA materials document meaningful differences in claims handling, transparency, incentives, and legal recourse (NASBP, 2024a; NASBP, 2024b; SFAA, 2024; Stoel Rives, 2021).

Table 18 shows why different instruments suit different risk appetites; bonds uniquely combine third-party prequalification with completion remedies (NASBP, 2018).

Table 18: Subcontract bonds vs SDI vs letters of credit (selected differences)

Attribute	Subcontract bonds	SDI	Letter of credit (LOC)
Beneficiary	GC (obligee) and, indirectly, owner	GC/insured	Owner (draw on demand)
Prequalification	Performed by licensed surety	Performed by GC	Bank credit only
Claims	Surety completion options; penal sum	Insurance claim with deductible/co-pay	Immediate draw; owner manages completion
Impact on credit	Does not consume GC's bank line	Deductibles/co-pays hit GC cash flow	Consumes borrowing capacity

Public work - Miller Act, FAR, and state “Little Miller Acts”

For federal construction contracts above statutory thresholds, the Miller Act requires separate performance and payment bonds; the FAR implements these requirements for executive agencies (40 U.S.C. §§3131–3133; FAR Part 28). On federal jobs, sureties must be Treasury-listed (Circular 570), and payment bond claim procedures, deadlines, and parties protected are statutory (U.S. Treasury, 2025; LII, 2025; FAR, 2025).

Underwriting basics engineers should know

Sureties underwrite surety credit on “3 Cs”: character, capacity, and capital. Financially, working capital, net worth, work-in-progress, backlog, and profit trends drive capacity.

Industry rules of thumb (which vary by surety and contractor profile) include aggregate backlog tolerances at a multiple of working capital and relationships between largest job size and historical experience; published ranges commonly reference 10–20× working capital for aggregate capacity, subject to many qualitative adjustments (CSBA, 2021; NASBP, 2023; Surety1, 2022).

Small or emerging contractors may access the SBA Surety Bond Guarantee (SBG) Program, under which SBA guarantees a portion of the surety's loss on qualifying bonds. Current limits allow guarantees on individual contracts up to \$9 million (or up to \$14 million with federal certification of necessity), with guarantee rates set by statute and regulation (SBA, 2025; CRS, 2025; 13 C.F.R. Part 115, 2025).

Practical drafting tips for engineers involved in procurement or design management

- **Specify acceptable bond forms and surety qualifications.** State that bonds must be issued by a surety admitted in the state (and Treasury-listed on federal jobs). Identify the bond form (e.g., AIA A312-2010 or EJCDC C-610/C-615) and align it with the general conditions (AIA A201 or EJCDC C-700) (U.S. Treasury, 2025; EJCDC, 2018; FAR, 2025).
- **Write clear delegated-design criteria.** For any delegated system, state performance criteria, required load cases, applicable codes, connection/interface responsibilities, required calculations and sealed drawings, and a submittal/review path that preserves the EOR's limited review role (AIA Contract Documents, 2022; EJCDC, 2018; Obeirne/EJCDC, 2022).

- **Preserve bond rights.** Maintain contemporaneous documentation; give notices precisely as the bond requires; avoid self-help completion before triggering the bond; and anticipate suit-limitation periods in the form (AIA Contract Documents, 2010/2024; ABA, 2022; IADC, 2021/2023).

Table 19 highlights procedural pitfalls documented in case notes and guidance; tight compliance maximizes recovery odds.

Table 6-4. Common obligee mistakes that jeopardize bond recovery and how to avoid them

Mistake	Why it is a problem	Better practice
Skipping the §3 steps and hiring a completion contractor unilaterally	Deprives the surety of its §5 election; courts may bar recovery	Follow A312 notice-conference-default-termination sequence (AIA Contract Documents, 2010; IADC, 2021/2023)
Failing to commit the balance of the contract price	A312 makes payment of the remaining balance a condition to surety performance	Document availability of the balance; place in a dedicated account if required (AIA Contract Documents, 2010)
Missing the limitations period	Late suit can be dismissed	Calendar contractual/statutory deadlines on day one (THSH, 2024)

Figures and forms: AIA and EJCDC at a glance

AIA A312. Mature case law; explicit surety options; built-in conference; typical two-year suit limitation from specified events; payment and performance issued as separate bonds (AIA Contract Documents, 2010/2024).

EJCDC C-610/C-615. Harmonized with C-700; integrates neatly with delegated-design provisions; often preferred on engineer-led projects (EJCDC, 2018; EJCDC Product Page, 2018).

Conclusion

Design-build and delegated design create powerful opportunities to integrate solutions and shrink delivery time, but they also tighten the coupling between design decisions, construction risk, and bonding.

For engineers, the key disciplines are:

- define performance criteria precisely;
- align delegated-design duties with licensure and review limits;
- insist on bond forms that fit the general conditions;
- verify surety qualifications; and
- follow the A312 or EJCDC bond procedures to the letter if problems arise.

Understanding how sureties underwrite capacity and how SDI programs differ from subcontract bonds will help multidisciplinary teams plan practicable delivery strategies and preserve remedies when schedules or budgets go off-plan.

Chapter 7: Contract Risk Transfer for Engineers: Indemnity, Additional Insureds, Primary/Non-Contributory, Waivers, and Certificates



Contractual indemnity: what it is, how far it can go, and where the insurance sits

Indemnification obligates one party to hold another harmless for specified losses. Construction practice distinguishes **limited**, **intermediate**, and **broad** indemnity. Many states restrict intermediate or broad clauses that would shift an indemnitee's own negligence downstream.

Modern AIA A201 indemnity ties the contractor's duty to the extent of its negligence, which is generally insurable under the CGL "insured contract" exception; EJCDC uses similar negligence-based allocations. Engineers should expect owners and prime contractors to align indemnity with the availability of CGL contractual liability and to avoid uninsurable promises, such as defending another party before fault is established or warranting perfection. (AIA, 2017; EJCDC, 2018; IRMI, 2018; ABA/Amundsen, 2017.)

Most states limit broad indemnity in construction (see Table 20). Drafting to negligence-based, insured-contract language improves enforceability and insurability.

Table 20: Indemnity types and typical U.S. statutory posture

Indemnity type	Basic idea	Typical statutory posture (illustrative)	Insurance hinge
Limited	Indemnitor covers only its own negligence	Allowed in all states	Covered as an "insured contract" under CGL when tied to BI/PD and negligence (IRMI, 2018).
Intermediate	Indemnitor covers losses except when indemnitee is 100% at fault	Frequently curtailed or conditioned	Often insurable if "caused in whole or in part by" indemnitor (subject to state law).
Broad	Indemnitor covers indemnitee's sole negligence	Largely prohibited in construction by anti-indemnity statutes	Generally uninsurable/unenforceable in construction settings.

Additional insured (AI) status: pair the clause with the right ISO forms

AI status shifts defense and indemnity to the upstream party's CGL (and sometimes umbrella), but only to the extent of the named insured's acts. Two ISO endorsements form the backbone for construction: CG 20 10 for ongoing operations, and CG 20 37 for completed operations. Many AIA Insurance & Bonds exhibits explicitly call for both forms; failure to include CG 20 37 leaves an owner without AI status after completion.

Where architects or engineers are intended AIs on a contractor's CGL, CG 20 32 (Engineers, Architects or Surveyors Not Engaged by the Named Insured) is commonly used; it grants CGL AI status but *excludes professional services*, which must be covered by the design professional's own PL policy.

AI on professional liability is generally not available or meaningful, and AIA/EJCDC frameworks reflect that by relying on PL rather than AI for design negligence. (ISO/IIAT specimen forms; AIA A101 Exhibit A; IRMI AI commentary; Prof. Underwriters; PCIA.)

Table 21 illustrates the use of CG 20 10 and CG 20 37 for owners/upper tiers; CG 20 32 for design professionals' non-professional exposures. Professional liability is kept separate.

Table 21: Common AI endorsements, scope and traps

Endorsement	What it does	Notable limits / traps
CG 20 10 (Owners, Lessees or Contractors - Ongoing Ops)	AI status for BI/PD "caused, in whole or in part, by" named insured's ongoing work	Post-1985 editions don't cover completed ops; must pair with CG 20 37 (Oberman LLP explainer).
CG 20 37 (Completed Ops)	Extends AI status to loss "for which the injury/damage occurs" after completion	Ensure completed-ops period matches contract; required by many AIA exhibits.
CG 20 32 (Engineers/Architects/Surveyors Not Engaged by You)	AI status to design professionals on contractor's CGL (non-professional risk)	Contains explicit professional services exclusion; does not replace design PL.

Primary and non-contributory (PNC) - ordering coverage without overpromising

"Primary" means the named insured's policy defends first; "non-contributory" means it will not seek contribution from the AI's own policy. ISO's CG 20 01 endorsement implements PNC when a written contract requires it, but it is not a promise of unlimited coverage, limits, terms, and triggers still apply.

Many umbrellas have parallel PNC endorsements that require scheduling the AI and a written PNC agreement. Drafting should specify PNC for **both** ongoing and completed operations where the AI is required. (ISO/IIAT CG 20 01; IRMI explanations; IRMI umbrella commentary.)

Waiver of subrogation: when it helps, when it does not

Waivers prevent a party's insurer from seeking recovery from project participants for covered losses. AIA A201 carries a property-insurance waiver of subrogation that typically extends into post-completion if the contract includes a continuation clause; for liability, ISO CG 24 04 waives the CGL carrier's subrogation rights against scheduled parties when required by contract.

Waivers reduce circular litigation on property claims but do **not** defend an owner or contractor against third-party tort suits; they only affect insurer recovery rights. (AIA A201 Article 11 and commentary; IRMI subrogation analysis; ISO CG 24 04 specimens.)

Certificates of insurance (COIs): evidence, not amendments

A COI shows that a policy exists on the date issued; it cannot amend coverage, confer AI status, grant PNC, waive subrogation, or change notice obligations. Statutes make this explicit, Texas Insurance Code **Chapter 1811** states a COI may confirm a policy has been issued but cannot alter policy terms or statutory notice; New York's Department of Financial Services has similarly emphasized that rights like cancellation notice depend on the policy/endorsement, not the certificate.

AIA and public owners often reference ACORD 25, whose legend plainly says the form "confers no rights" and that AI/waiver terms require endorsements. Engineers should insist on receiving the actual endorsements (e.g., CG 20 10/20 37/20 32; CG 20 01; CG 24 04) rather than relying on COI text. (Texas Ins. Code ch. 1811; NY DFS opinions; ACORD 25 form.)

Making risk transfer work - contract → endorsement → claim

Contract requires:

- 1) negligence-based indemnity;
- 2) AI (CG 20 10 + CG 20 37; CG 20 32 for A/E);
- 3) PNC (CG 20 01);
- 4) waiver (CG 24 04);
- 5) evidence by COI **plus** endorsements. Summary:

If the contract language, the policy, and the endorsements match, the tender and defense flow smoothly. If any link is missing, disputes about "other insurance," contribution, or subrogation are likely.

AIA and EJCDC baselines: what they actually require

The 2017 AIA suite moved most insurance specifications into the Insurance & Bonds exhibit, which states that owners and architects are AIs on the contractor's CGL for both ongoing and completed operations and requires PNC status to the extent commercially available.

A201 keeps the waiver-of-subrogation framework in Article 11 and sets the mutual waiver of consequential damages elsewhere in the conditions. EJCDC C-700 and its commentary outline coordinated insurance clauses and emphasize aligning endorsements (including edition years) with what is commercially available.

Engineers participating in procurement should verify that the insurance exhibit and the general conditions agree on who must be an AI, which edition of ISO forms is acceptable, and which waivers apply. (AIA A101 Exhibit A; A201 summary; EJCDC C-700 and Commentary.)

Anti-indemnity statutes: how they shape your clauses

By 2024–2025, the overwhelming majority of jurisdictions have anti-indemnity statutes restricting agreements that make one party pay for another's sole (and often partial) negligence in construction. Surveys from respected coverage counsel and legal publishers catalog the state-by-state limits.

The practical result is that "broad form" is rarely enforceable; "intermediate" is often constrained; "limited" (own negligence) is safe. Contracts that ignore these statutes risk partial invalidation and insurance friction because CGL carriers often tailor contractual liability to follow state law and ISO endorsements that require negligence by the named insured. (SDV, 2024; Cokinos Young, 2025; LexisNexis/Thomson Reuters charts.)

Duty to defend, professional services, and design-firm realities

For design professionals, agreeing to **defend** a client at the allegation stage is a high-risk promise because A/E professional liability policies are claims-made and generally do not fund a third party's defense until negligence is established, creating uncovered defense exposure.

Professional societies and industry groups advise limiting obligations to indemnity for the engineer's **negligence**, not assuming an uninsurable duty to defend. Where a contractor's CGL is intended to defend an owner or architect, that defense typically arises under AI status tied to the contractor's negligence, not the designer's. (AIA/ASCE/ACEC resources; ABA analysis of duty-to-defend risks.)

Putting it to work: owner: GC–A/E alignment on a municipal pump station

An owner issues an RFP based on AIA A201 and Exhibit A. The insurance exhibit requires the owner and architect to be AIs on the GC's CGL for both ongoing and completed operations (CG 20 10 + CG 20 37), PNC (CG 20 01), and a CGL waiver (CG 24 04) as allowed by law; the GC must furnish copies of the **endorsements** with the COI.

The subcontract requires downstream parity. The design contract uses EJCDC E-500 exhibits and limits the engineer's indemnity to losses **to the extent caused by** the engineer's negligence, expressly disclaims a duty to defend, and confirms that AI on PL is not applicable.

When a post-completion injury occurs at the pump station and is alleged to have been caused in part by the GC's workmanship, the owner tenders to the GC's carrier as an AI under CG 20 37; the carrier accepts the defense on a primary, non-contributory basis per CG 20 01, while the engineer's PL carrier monitors in case design negligence is alleged. Because the waiver of subrogation applies to property losses only, it does not impede the injury claim.

The COI plays no role beyond showing the endorsements were issued. (AIA Exhibit A; ISO CG 20 37/CG 20 01; IRMI explanations; Texas/NY COI guidance for evidence vs. rights)

The enforceable package is contract language **plus** the exact ISO endorsements; the COI alone is never enough (see Table 22).

Table 22: Contract clause → Insurance instrument → Evidence to collect

Contract requirement	Insurance mechanism	What to collect (beyond COI)
Indemnity limited to indemnitor's negligence for BI/PD	CGL "insured contract" exception (unmodified), avoid CG 24 26-type restrictions	Policy pages showing contractual liability not narrowed; any "insured contract definition" endorsements (IRMI).
AI for owner/architect—ongoing + completed ops	ISO CG 20 10 + CG 20 37 (edition per spec)	Copies of the AI endorsements; confirm "caused in whole or in part by" language; completed-ops term (AIA Exhibit A; ISO).
PNC wording	ISO CG 20 01 (and umbrella PNC, if required)	The PNC endorsement(s), scheduled AI names, and written-contract condition met (IRMI).
Waiver of subrogation	ISO CG 24 04 for CGL; property waiver per A201 Article 11	Endorsement copies and confirmation of contract requirement; check scope (IRMI; AIA).
Evidence of coverage	ACORD 25 COI	COI plus endorsements; remember COI confers no rights; cancellation notice per policy/statute (TX 1811; NY DFS).

Consequential damages and risk allocation

Mutual waivers of consequential damages, embedded in A201, limit indirect-loss exposure for owners and contractors; liquidated damages provisions, if used, become the negotiated surrogate for some consequential elements. Engineers should confirm the waiver's presence and consistency with delay-damage language and insurance exhibits to reduce disputes over "economic loss" outside bodily injury or property damage. (AIA A201 commentary and articles; AGC commentary.) ([Learn - ACD Operations][34], [Associated General Contractors][35])

Conclusion

Effective risk transfer is a three-link chain: **sensible indemnity, precise insurance endorsements**, and **accurate evidence**. Draft negligence-based indemnity that aligns with "insured contract" coverage; require AI via the correct ISO forms, CG 20 10 and CG 20 37 for owners/upper tiers and CG 20 32 (non-professional) for design professionals, paired with CG 20 01 for PNC and CG 24 04 for waiver of subrogation.

Recognize that waivers do not defend third-party claims and that COIs are informational only; insist on the endorsements. Respect anti-indemnity statutes: they shape what is enforceable and therefore insurable.

Above all, avoid uninsurable promises like a stand-alone duty to defend for professional services, and keep professional liability separate from CGL additional-insured constructs. When contract text, endorsements, and practices are aligned, tenders are accepted promptly and engineering firms avoid uninsured surprises.

Chapter 8: Pollution and Environmental Risk (Contractual Allocations, CPL, PLL, and Transportation/PFAS Updates)



Why environmental risk matters to engineers

Environmental liabilities routinely overwhelm conventional project contingencies because statutes such as CERCLA impose strict, joint-and-several liability for cleanup and for natural resource damages, often irrespective of fault (EPA, 2024a). This means a single “deep-pocket” participant—frequently the owner or a readily identifiable contractor—may be targeted for the entirety of site remediation and assessment costs even when contributions by others are uncertain (EPA, 2014a; EPA, 2025a).

For practicing engineers, the practical triggers are predictable: unexpected contaminated soils encountered during excavation; stormwater discharges from construction activities; spills during transportation of waste or chemicals; product or system failures causing a release; and emerging contaminant claims (e.g., PFAS) that were not contemplated at bid time.

The regulatory hooks are equally predictable: CERCLA for hazardous-substance releases and cost recovery; RCRA for “cradle-to-grave” hazardous waste generation, transport, treatment, and disposal; and the Clean Water Act's NPDES program for stormwater from construction and industrial sites (EPA, 2025b; EPA, 2025c; EPA, 2022a).

Regulatory landscape essentials

- **CERCLA (Superfund):** CERCLA authorizes federal response to hazardous substance releases and imposes retroactive, strict, and joint-and-several liability on defined potentially responsible parties (PRPs)—including current owners/operators, past owners/operators at time of disposal, arrangers, and transporters—while also enabling recovery for natural resource damages (NRD) by federal, state, and tribal Trustees (EPA, 2025a; EPA, 2024b).
- **RCRA:** RCRA establishes a cradle-to-grave system governing hazardous waste from generation through disposal, including manifest requirements and

transporter standards. The e-Manifest system now provides electronic tracking nationwide, reinforcing generator responsibility even after waste leaves the site (EPA, 2025b; EPA, 2025d; EPA, 2025e).

- **CWA/NPDES stormwater:** For construction disturbing one acre or more (or part of a larger common plan), the EPA 2022 Construction General Permit (CGP) requires development and maintenance of a Stormwater Pollution Prevention Plan (SWPPP) with specified controls and documentation; industrial facilities in EPA jurisdictions operate under the 2021 Multi-Sector General Permit (MSGP), with sector-specific limits and monitoring (EPA, 2022a; EPA, 2021a; EPA, 2025c).
- **TSCA (PFAS reporting):** Under TSCA §8(a)(7), EPA finalized a one-time PFAS reporting rule covering manufacture/import since 2011. EPA subsequently delayed the start of the submission period—most recently to April 13, 2026—so engineers advising manufacturers/importers must plan for data collection and recordkeeping aligned to that schedule (EPA, 2025d; EPA, 2024a–d).

Contractual allocation of environmental risk

- **Standard forms (AIA A201):** Under AIA A201–2017, Article 10 allocates primary responsibility for pre-existing hazardous materials to the Owner, while holding the Contractor responsible for hazardous materials the Contractor brings to the site and negligently handles. Section 10.3.5 obligates the Contractor to reimburse the Owner for remediation costs caused by the Contractor's negligent handling of hazardous materials it brings; Section 10.3.4 clarifies the Owner is not responsible for such contractor-introduced materials (AIA, 2017; AIA, 2022). Engineers and construction managers should ensure scopes and allowances reflect this allocation and that environmental insurance matches the contract's risk map (AIA, 2024).
- **Standard forms (EJCDC C-700):** EJCDC C-700 (2013/2018) addresses "Hazardous Environmental Conditions" in Article 5, including notification/stop-work mechanisms and Owner duties to remediate, with explicit carve-outs from differing site conditions. The structure emphasizes immediate isolation and prompt Owner direction—critical from a loss-mitigation and coverage-preservation standpoint (EJCDC, 2013/2018). ([EJCDC][9])
- **Practical drafting notes:** Standard clauses should be coordinated with the project's SWPPP/MSGP obligations and site-specific known conditions. Placeholders for environmental consultants, chain-of-custody protocols, and emergency response vendors reduce ambiguity at first notice of pollution (FNoP). Align indemnities with insurance actually carried (see Table 8.1), and confirm whether professional services (e.g., environmental engineering) are included or carved out from CPL/PLL forms (IRMI, 2018).

Insurance architecture: how the pieces fit

- **CGL limits and pollution exclusions:** The ISO CGL form contains an "absolute" or "total" pollution exclusion (CG 21 49 et al.) that removes most cleanup costs and many pollution-related BI/PD claims unless brought back by endorsement. Exceptions exist, but they are narrow and inconsistently

interpreted across jurisdictions; relying on them for construction or environmental operations is a common error (IRMI, 2021; IRMI, 2013).

- **Contractors Pollution Liability (CPL):** CPL is a contractor-based policy—claims-made or occurrence—covering third-party BI/PD, cleanup, and defense for pollution conditions arising out of contracting operations, often including transportation and non-owned disposal site (NODS) coverage by endorsement. Forms are manuscript; coverage varies widely; attention to definitions of “pollutants,” “pollution conditions,” and jobsite scheduling is essential (IRMI, 2018; IRMI, 2018b).
- **Pollution Legal Liability (PLL):** PLL (a site/premises form) protects owners/operators for on-, at-, under-, or migrating-from a covered location, with options for existing conditions, business interruption, NODS, and sometimes transportation. PLL is frequently used in transactions to backstop indemnities and manage legacy conditions (IRMI, 2006; RT Specialty, 2024).
- **Transportation and auto pollution:** ISO Business Auto (CA 00 01) contains a pollution exclusion with limited carve-backs tied to “covered pollution cost or expense,” typically requiring BI/PD caused by the same accident. The ISO CA 99 48 “Broadened Pollution Liability - Covered Autos” endorsement expands, but does not eliminate, the exclusion. For regulated motor carriers, the federal MCS-90 endorsement obligates the insurer to pay certain judgments to protect the public—even when the policy otherwise excludes the loss—subject to the insurer’s reimbursement rights against the insured (49 CFR Part 387; IRMI, n.d.; ISO BAP excerpt) (FMCSA, 49 CFR 387.7, 387.15; IRMI, MCS-90; Sonoma County exemplar).
- **Cradle-to-grave and NODS:** Because CERCLA liability follows wastes to treatment, storage, and disposal facilities, NODS coverage (via CPL or PLL) is a key hedge for generators and contractors. Underwriters commonly require site identification; blanket NODS is available but often sub-limited (IRMI, 2008; IRMI, 2006).

Tables and figures

No single policy solves environmental risk (see Table 23). CPL handles operations; PLL handles sites; auto endorsements cooperate unevenly; MCS-90 protects the public, not the insured’s balance sheet.

Table 23: Environmental insurance at a glance (what it is and what it is not)

Instrument	Insured party focus	Primary trigger(s)	Typical inclusions	Typical gaps or cautions	Practical use
CPL	Contractor	"Pollution conditions" from contracting operations (claims-made or occurrence)	Third-party BI/PD, cleanup, defense; transportation and NODS by endorsement	Manuscript forms vary widely; mold/legionella often sub-limited; products/completed operations may be limited	Required for trades with material environmental exposure; align with AIA/EJCDC scopes (IRMI, 2018).
PLL	Owner/operator (site)	New/existing conditions on or from covered location(s)	BI/PD, cleanup, defense; business interruption; NODS; sometimes transportation	Known conditions must be scheduled; changes in use may alter risk; product pollution typically excluded	Transactions, brownfields, campus operations, decommissioning (IRMI, 2006; RT Specialty, 2024).
ISO CA 99 48 (Auto endorsement)	Auto liability insured	Broadened carve-back for "covered pollution cost or expense"	Limited cleanup when tied to BI/PD from same accident	Does not delete exclusion; many scenarios still rely on CPL/PLL	Complements CPL on rolling stock (IRMI, MCS-90 note).
MCS-90 (Federal endorsement)	Certain regulated motor carriers	Statutory financial responsibility for public liability	Insurer pays eligible judgments regardless of policy exclusions, then seeks reimbursement	Not insurance "coverage"; repayment exposure to insured	Ensures public compensation; does not replace CPL/PLL (FMCSA; IRMI).

The PFAS rule set will influence specifications (see Table 24), site management, and insurance wording for years; project teams should assume increasing scrutiny in contracts and coverage.

Table 24: Current federal PFAS actions relevant to engineering and insurance

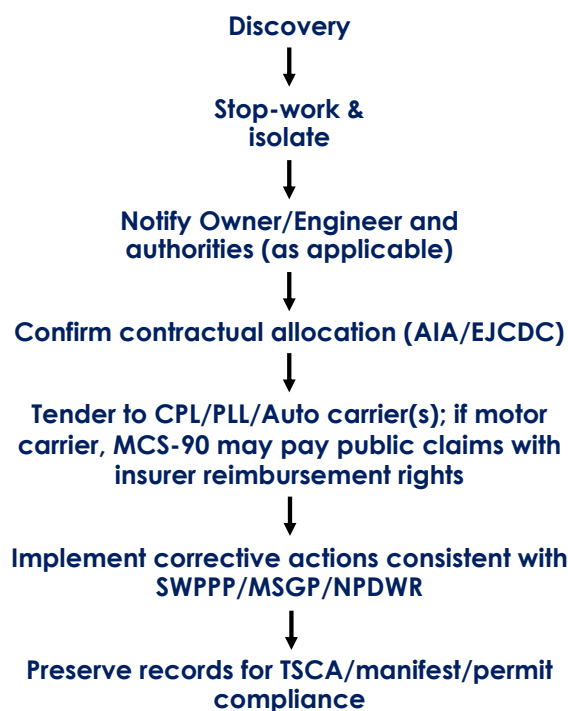
Action	What changed	Implications
NPDWR for PFAS (Apr 2024)	Final enforceable MCLs: PFOA 4 ppt; PFOS 4 ppt; PFNA 10 ppt; PFHxS 10 ppt; HFPO-DA (GenX) 10 ppt; Hazard Index for mixtures of PFHxS, PFNA, HFPO-DA, and PFBS set at HI=1 (EPA, 2024b–d).	Utilities must monitor and treat; engineering specs will increasingly call for GAC/IX/RO; PLL/CPL underwriters will scrutinize PFAS in scope and materials.
CERCLA designation (Apr/Jul 2024)	PFOA and PFOS designated "hazardous substances." Immediate reporting for releases at/above the reportable quantity; expanded enforcement leverage for cleanup and NRD (EPA, 2024e–f).	Heightened liability for releases; greater diligence at demolition, dewatering, and waste management; watch PFAS exclusions.
TSCA §8(a)(7) PFAS reporting	One-time reporting of manufacture/import since 2011; EPA has delayed the submission start to April 13, 2026 (EPA, 2025c–d).	Manufacturers/importers (incl. in articles) should inventory PFAS and retain records; engineers in product design and supply chains must anticipate data needs.
AFFF → F3 transition	FAA/DoD transition to fluorine-free foams; guidance and CertAlerts governing change-out and rinsing of ARFF vehicles (FAA, 2023–2025).	Airport and defense projects require revised specifications, environmental handling plans, and disposal protocols for legacy foam and rinseates.

Table 25 shows how both forms separate legacy contamination from contractor-introduced hazards; match your CPL/PLL to this allocation and make sure scopes and SWPPPs align.

Table 25: Contractual allocation snapshot (AIA vs EJCDC) for hazardous materials

Topic	AIA A201–2017	EJCDC C-700 (2013/2018)
Pre-existing hazardous materials	Owner bears responsibility; contractor stops work and awaits instruction (§ 10.3.1–10.3.4) (AIA, 2017).	Article 5 sets notice/stop-work; Owner provides direction and remediation; specific procedures for “Hazardous Environmental Conditions” (EJCDC, 2013/2018).
Contractor-introduced hazardous materials	Contractor reimburses Owner for costs if negligently handled (§ 10.3.5) (AIA, 2017; AIA, 2024).	Similar isolation/notification; contract mechanisms emphasize immediate action and Owner direction (EJCDC, 2013/2018).

Figure 7 below summarizes the operational sequence from discovery to coverage and response of a simplified pollution claim pathway.



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Figure 7: Pollution claim pathway (simplified).

Figure 8 highlights why CPL/PLL are still needed even when auto and MCS-90 apply.

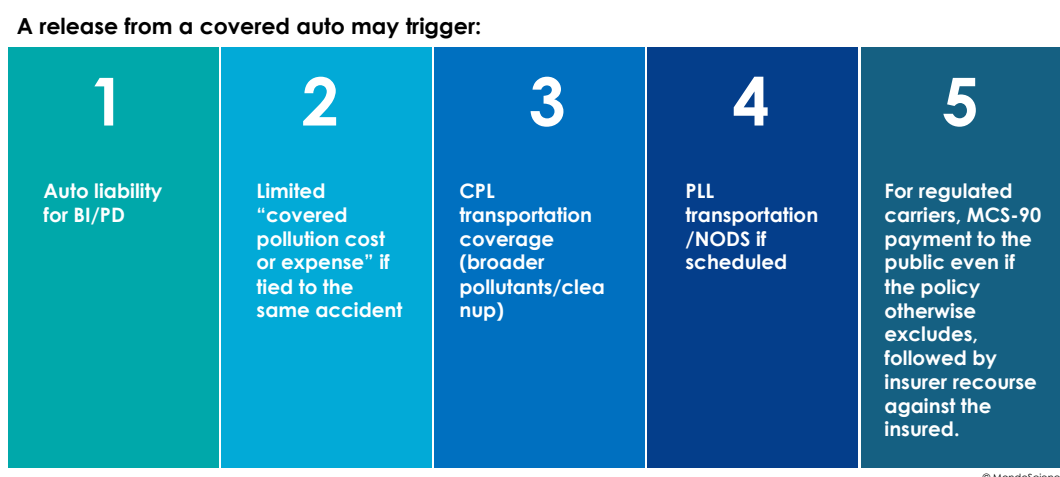


Figure 8: Transportation spill coverage interactions.

PFAS: engineering, contracting, and insurance responses

- Drinking water standards:** EPA's final NPDWR sets very low MCLs, 4 ppt for PFOA/PFOS and 10 ppt for PFNA, PFHxS, and GenX chemicals, with a Hazard Index of 1 for mixtures of PFHxS, PFNA, HFPO-DA (GenX), and PFBS. Utilities have three years to complete initial monitoring and five years to achieve compliance; projects specifying treatment (e.g., GAC, IX, RO) should reflect these targets in design criteria and performance testing (EPA, 2024b–d).
- CERCLA designation and reporting:** PFOA and PFOS are now "hazardous substances," activating release reporting, federal response, and PRP cost recovery. Expect more federal and state enforcement and increased NRD claims at sites where PFAS are detected (EPA, 2024e–f).
- TSCA reporting cadence:** Manufacturers and importers—including in articles—must prepare for comprehensive PFAS reporting under §8(a)(7). EPA's interim final rule has pushed the submission start to April 13, 2026, affecting compliance planning and supplier data requests (EPA, 2025d).
- AFFF to fluorine-free foam (F3):** The FAA and DoD have issued specifications and guidance for transitioning to F3 foams, including rinsing procedures for ARFF vehicles; projects at airports and bases must incorporate these requirements for equipment change-out, waste handling, and acceptance testing (FAA, 2023; FAA, 2024; FAA, 2025).
- Insurance market posture.** As PFAS losses and enforcement expand, many insurers apply PFAS-specific exclusions or sub-limits on casualty and environmental forms. Buyers with plausible PFAS touchpoints (e.g., coatings, sealants, water treatment, biosolids management, airports) should expect underwriting questionnaires and manuscript exclusions; early engagement with environmental markets is critical (Marsh, 2025).

Integrating risk controls into project delivery

- **Design and scope:** Specify sampling/characterization where earthwork intersects historic fill, industrial footprints, or known AFFF use. Tie dewatering and stormwater controls to the CGP/MSGP and any PFAS-sensitive receptors. Ensure your SWPPP links to practical BMPs the contractor can execute (EPA, 2022a; EPA, 2021a).
- **Contracting:** Align AIA/EJCDC hazardous-materials clauses with scope, schedule, pricing, and insurance. Where PFAS is suspected, consider bid alternates for treatment and disposal options, set clear change-order paths, and pre-qualify disposal facilities.
- **Insurance placement:** For contractors, CPL should expressly include transportation, emergency response costs, and NODS; for owners, PLL should contemplate existing conditions, business interruption, and NRD. Validate auto program endorsements (CA 99 48) and confirm MCS-90 applies where required by FMCSA (IRMI, 2018; IRMI, n.d.; FMCSA, 49 CFR Part 387).

Claim scenarios and lessons

- **Scenario 1: Excavation encounters PFAS-impacted groundwater.**
Stop-work; implement isolation and dewatering control; notify Owner/Engineer per AIA/EJCDC; perform field screening and lab confirmation; coordinate disposal through RCRA manifest where applicable; tender to PLL (site) and CPL (operations); if dewatering discharge is required, secure permit/approval before resuming (AIA/EJCDC; EPA CGP/MSGP; NPDWR informs risk framing).
- **Scenario 2: Tanker overturn releases chemicals to a watercourse.**
Emergency response and public notification; auto liability responds to BI/PD and limited pollution cost/expense; CPL transportation coverage addresses cleanup beyond auto carve-backs; if a regulated motor carrier is involved, MCS-90 may compel insurer payment to third parties even if the policy would otherwise exclude, followed by insurer reimbursement against the carrier (ISO/FMSCA/IRMI).
- **Scenario 3: Disposal site later becomes a Superfund PRP site.**
CERCLA PRP letters identify the generator; NODS under PLL/CPL can defend and indemnify subject to terms; early records (manifests, profiles) determine allocation and coverage (IRMI, 2008; EPA, 2025b–e).

Conclusion

Environmental liabilities are fundamentally contractual and statutory problems that become insurance problems only if you pre-plan correctly. AIA and EJCDC forms already draw a line between legacy conditions and contractor-introduced materials; your job is to ensure scopes, SWPPPs, and insurance follow that line.

CPL protects contracting operations; PLL protects sites and transactions; auto pollution carve-backs are narrow; and MCS-90 protects the public rather than the insured. PFAS rules, drinking water MCLs, CERCLA designation, TSCA reporting, and the AFFF-to-F3 transition together signal a multi-year tightening of standards.

Engineers who integrate these changes into specifications, procurement, and insurance will reduce unbudgeted liabilities and preserve project value.

Chapter 9: Professional Liability in Modern Delivery: Aligning PL, Wrap-Ups, OPPI/PSPL, BIM/Cyber, and Joint Ventures



Why alignment matters

PL for AE firms is claims-made, subject to retroactive (prior-acts) dates and extended reporting periods (ERP/tail). If the retro date is too recent, or an ERP is not secured at merger/closure, coverage for legacy work can evaporate—even if the firm performed to standard. PSPL and OPPI can solve single-project limit, continuity, and collectability concerns that practice PL alone cannot. (IRMI, 2005; IRMI, 2023; IRMI, 2019; Prof. Underwriters, 2021.)

Design-build and progressive design-build (PDB)

DB shifts a portion of design risk to the constructor or an integrated DB entity; the owner often requires project-dedicated PL capacity or OPPI to protect against designer insolvency, exhausted practice limits, or late-arising claims. Industry guidance describes PSPL for DB/P3 as primary, project-dedicated limits for the design team, often coordinated with subconsultants, while OPPI gives owners first-party protection excess of the designers' PL. PDB's iterative pricing/design increases reliance on early design coordination and PL dedicated limits. (DBIA, 2023; IRMI, 2023; IRMI, 2008; Greyling, 2024.)

IPD and multiparty frameworks

AIA C191 (IPD multiparty) promotes collective risk/reward and target-cost structures; insurance still sits outside the agreement unless exhibits or project policies are added. Teams should pair IPD with PSPL or OPPI where large-limit, multi-party defense and continuity are needed. (AIA C191 help pages, 2024.)

Public-private partnerships (P3)

Recent task-force papers on PSPL in DB/P3 report that procurement and contractual practices (e.g., aggressive warranties/fitness, broad duty-to-defend, long completed-ops) influence the availability and capacity of PSPL; aligning terms with

insurability improves market receptivity. (MG+M/Donovan Hatem task force papers, 2022–2025.)

Wrap-ups (OCIP/CCIP) and PL

Most wrap-ups focus on workers' compensation and CGL/umbrella; PL is *not* typically a core wrap-up line unless the sponsor purposely adds a project PL component. Participants must check "wrap-up exclusions" on their own practice policies and confirm whether project PL (if any) replaces their practice PL via project-specific exclusions. (FHWA; AGC/IRMI; IRMI wrap-up primers.)

BIM/digital practice, tech E&O, and cyber

New AIA BIM exhibits (E202-2022/E203-2013) formalize model uses, LOD, reliance, and digital-data protocols; they also flag insurance implications. PL often excludes pure cyber/tech losses; courts continue to push firms toward separate cyber/tech E&O when wire-fraud or network events drive loss. Engineers should couple PL with cyber and, where applicable, tech E&O endorsements if they host models or provide software-like services. (AIA E-series instructions; AXA XL notes; IRMI cyber/tech E&O.)

Professional duty-to-defend promises

Industry bodies warn that agreeing to defend clients at the allegation stage creates uninsurable obligations for design firms; PL responds to negligence, not a freestanding contractual defense promise. Keep indemnity to "to the extent caused by Engineer's negligence" and avoid unconditional defense. (ACEC; NSPE practice guidance.)

CPrL with rectification/mitigation

For contractor-led DB, CPrL fills the professional-services gap for design delegated to or performed by the contractor. Rectification/mitigation ("first-party fix") can fund rapid correction of design errors to keep work moving, without waiting for fault adjudication, but forms vary widely and interact with designers' PL and any PSPL. (IRMI definitions and articles.)

Joint ventures (JVs)

AIA C101-2018 offers a JV framework for professional services; beware that GL policies usually exclude JV exposures unless the JV is scheduled, and PL must be arranged for the JV entity or via project PL. Clarify who owns the design, whose retro dates apply, and how ERP will be funded at closeout. (AIA C101 guidance; IRMI JV definition.)

Claims-made essentials for engineers

PL is generally written on a claims-made basis:

- (1) the *claim* must be first made and reported within the policy period (or ERP), and
- (2) the act must be on/after the retro date. M&A, retirement, or non-renewal require careful ERP ("tail") planning and preservation of the original retro date to protect legacy work. (IRMI definitions and commentary.)

Delivery method dictates the sensible PL chassis; practice PL alone is rarely sufficient for large DB, IPD, or P3 projects (see Table 26).

Table 26: Delivery method vs primary professional-risk instruments (overview)

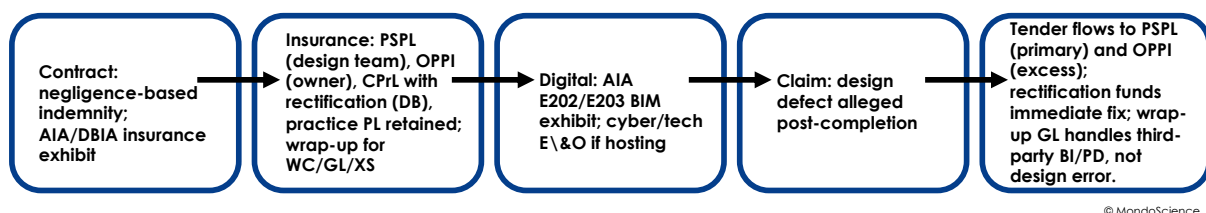
Delivery method	Typical PL structure	Who buys/controls	Strengths	Cautions
Design-Bid-Build	Practice PL for each A/E; optional OPPI by owner	A/E (practice); owner (OPPI)	Familiar; scalable; OPPI supplements designer limits	Fragmented defense towers; OPPI terms vary. (IRMI OPPI.)
Design-Build / PDB	PSPL for design team (project-dedicated) and/or OPPI; CPrL for DB	DB/designers/owner depending on structure	Dedicated limits; continuity for long tail	Contract terms drive insurability; coordinate with CPrL rectification. (IRMI PSPL/CPrL.)
IPD (AIA C191)	PSPL and/or OPPI layered over practice PL	Team/owner	Aligns with multiparty incentives; reduces finger-pointing	Must bolt on insurance; watch shared services definition. (AIA C191.)
P3 (DBFOM variants)	PSPL with high limits; owner OPPI common	Concessionaire/owner	Addresses extended obligations	Procurement terms can chill capacity; plan early. (MG+M/Task Force.)

Retro dates and tails are as consequential as limits; administer them like scope, schedule, and fee (Table 27).

Table 27: Claims-made mechanics engineers must control

Element	What it is	Why it matters	What to verify
Retroactive date	Earliest covered act date	Pre-retro work is out even if claim is made today	Maintain original retro date across renewals/M&A
ERP/tail	Time after expiry to report claims	Protects finished projects when a firm retires/sells	Purchase adequate ERP; understand BERP vs SERP
Project-specific exclusion	Practice PL exclusion when PSPL exists	Avoid unintentional gaps if PSPL exhausts/fails	Contractual requirement to keep viable project coverage

When contract, policies, and exhibits match, tenders land on the intended towers without leakage (Figure 9).



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Figure 9: Alignment chain for a DB/PDB water plant (contract → insurance → claim)

Wrap-up specifics engineers should watch

FHWA/AGC and market guidance show most OCIPs/CCIPs enroll WC, CGL, and excess; PL is sometimes added but not presumed. Corporate policies may include “wrap-up exclusions,” so participants should obtain wrap-up manuals, confirm enrollment, and document any project-specific PL or OPPI sitting alongside the wrap-up. (FHWA; AGC & IRMI wrap-up resources.)

BIM/Model reliance language and insurance

AIA's updated BIM exhibits (E202-2022 and E203-2013) require a BIM Execution Plan, characterize model uses/reliance, and remind parties to consider insurance for digital risks. If models are *not* contract documents, say so; if they are, confirm PL, tech E&O, and cyber address the reliance you are granting. (AIA instructions and articles.)

Duty-to-defend and insurability

ACEC and NSPE emphasize that unconditional defense obligations for design professionals are typically not covered by PL; tie obligations to negligence and to recoverable damages (not first-dollar defense). (ACEC; NSPE.)

Common PL exclusions to keep in mind PL forms commonly exclude intentional/dishonest acts, certain product/manufacturing exposures, some contractual liabilities beyond negligence, and non-professional risks; CGL may carry professional-services exclusions. Coordinate CGL additional-insured constructs with PL realities to avoid “no-man's land.” (IRMI exclusions; IRMI CGL professional exclusion.)

Conclusion

Delivery method, contract language, and insurance must be engineered together. For DB/PDB and P3, consider PSPL for the design team plus OPPI for the owner, and CPrL with rectification for the constructor—then align indemnity, BIM exhibits, wrap-up enrollment, and cyber/tech E&O so claims-made rules (retro dates and tails) never surprise you. For IPD, the multiparty agreement (AIA C191) fosters collaboration, but you still need a deliberate PL solution. Throughout, avoid uninsurable defense promises and keep digital-risk insurance commensurate with your BIM/data role.

Chapter 10: Claims, Disputes, and Closeout: Making the Coverage Work



Claims and “notice”: triggers, clocks, and where engineers go wrong

Professional liability (PL) is almost always **claims-made**. Many forms are “claims-made-and-reported,” which require not just that the claim arise during the policy period, but that it be **reported** to the insurer within the policy's reporting window. Late notice is a frequent coverage killer; if your policy says “as soon as practicable” or sets a firm reporting deadline, treat it as a condition precedent to coverage (IRMI, 2023).

For contractors' professional liability (CPRL) and similar claims-made policies, the same timing logic applies; denials often stem from reporting the “error, incident, or circumstance” after the contractually required timeframe. If your policy allows reporting of **circumstances** reasonably expected to give rise to a claim, use it to lock the matter to the current policy year (IRMI, 2023a).

General liability (CGL) is generally **occurrence-based**, but additional insured (AI) coverage still demands **prompt, effective notice** to each potentially responsive insurer. The safest practice is to tender early to all carriers that might respond—your own, upstream and downstream—because some AI endorsements impose separate notice duties on the AI (IRMI, 2015; IRMI, 2006).

Contracts set their own notice clocks. Under AIA A201–2017, claims first discovered before the end of the one-year **correction period** must be initiated by notice within **21 days** and are subject to an Initial Decision Maker (IDM); claims discovered after the correction period are noticed but skip the IDM step (AIA, 2017).

Contract clocks and policy clocks are different; you must satisfy **both** to preserve rights (Table 28). The AIA 21-day claim notice and the PL reporting window often run in parallel.

Table 28: First 72 hours after a loss: who must be notified and why

Triggered event	Notify (contract)	Notify (insurance/surety)	Why it matters
Design error alleged (letter of claim)	Owner per AIA/EJCDC claim article	PL carrier; broker	Claims-made timing; possible “circumstance” report (IRMI, 2023/2023a).
Jobsite injury tied to your sub's work	Owner/GC under contract; document as a claim	Sub's CGL (AI tender), your CGL excess	Early AI tender preserves defense on a primary/non-contributory basis where required (IRMI, 2018; 2015).
Suspected contractor default	Owner notifies surety per A201 §15.2.7 and bond	Surety under A312 conditions	Surety obligations arise only after bond conditions (notice, default/termination) are met (AIA, 2022; SuretyBond Quarterly, 2022).

Tendering defense and coverage: own policy, additional insured rights, and “targeted tender”

To “tender” is to place your defense and its costs with another party or insurer pursuant to the policy or contract (IRMI, n.d.). In construction, engineers often have **two** tender tracks: to their own PL/CGL carriers, and (when they are an AI) directly to a contractor's CGL carrier. Proper AI tender can shift immediate defense costs away from the engineer's program (IRMI, 2022). Some jurisdictions allow **targeted tender** (electing which concurrent policy must respond first), but this is state-specific and not universal; treat it as a strategic, jurisdiction-dependent tool (Reed Smith, 2022).

When your contract or the insurance exhibit requires **primary and non-contributory** status, confirm the named insured's policy includes the ISO PNC endorsement (e.g., CG 20 01) or equivalent wording; without it, your own liability policy may be drawn into contribution even after an AI tender (IRMI, 2018).

Insurers commonly acknowledge a tender while sending a **reservation-of-rights** (ROR) letter. An ROR signals the insurer will defend or investigate now while reserving its right to deny all or part of coverage after fact development; it is not a denial (Investopedia, 2015; Hartley Law, 2025).

Duty to defend vs. duty to indemnify, and why the difference matters in engineering claims

In many states, the insurer's **duty to defend** is broader than the **duty to indemnify**. Defense is triggered by allegations potentially within coverage, while indemnity turns on facts actually established in the case or settlement. PL and CGL policies handle these duties differently; read the defense grant and any “panel counsel” or “cooperation” requirements before a dispute arises (Phelps, 2020; Phelps, 2025; Jenner & Block, 2015).

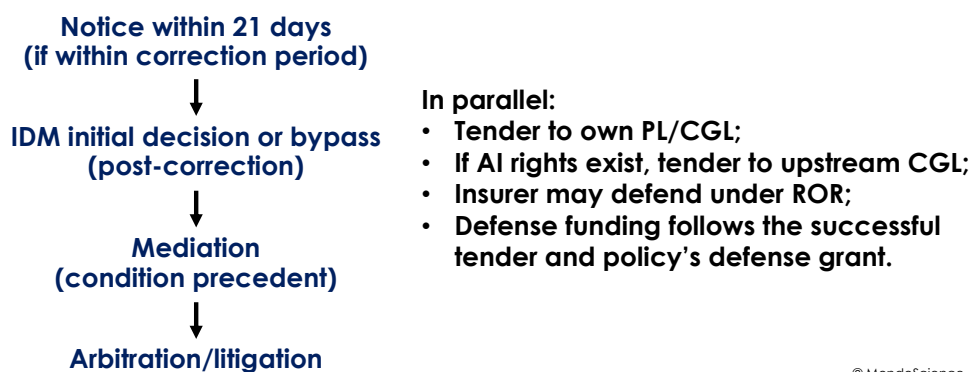
Consent-to-settle provisions and so-called **hammer clauses** can limit the insurer's obligation if an insured refuses a recommended settlement. Many PL markets soften or omit hammer clauses for design professionals, but you should verify your form and negotiate where possible (IRMI, n.d.; ProfUnderwriters, 2023; USI Affinity, 2024).

Contract claim path, ADR, and arbitration updates

AIA A201–2017 Article 15 requires that most claims be referred first to an **Initial Decision Maker**, then proceed to **mediation** as a condition precedent to binding dispute resolution. The document supplies timelines for IDM responses and confirms that failure to decide within 30 days opens the door to mediation and beyond (AIA, 2017).

If the parties select arbitration, the **AAA Construction Industry Rules** (updated in 2024) now require that **consolidation and joinder** requests be filed before the merits arbitrator is confirmed (changed from a prior 90-day window), with a 14-day response period—material for multi-party construction disputes (AAA, 2024; O'Melveny, 2025).

Figure 10 shows how contract ADR steps and insurance tenders proceed on coordinated but independent tracks.



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Figure 10: Claim path under A201 and insurance

Surety claims under performance bonds: conditions, options, and pitfalls

AIA **A312–2010 Performance Bond** makes the surety's obligations contingent on the obligee's compliance with bond conditions, including declaring default and (where required) terminating the principal before the surety's duty to act is triggered. Courts enforce those conditions; noncompliance can defeat recovery (AIA, 2022; SuretyBond Quarterly, 2022).

At a high level, a performance bond gives the owner a guarantee of completion or financial remedy if the contractor defaults; a payment bond protects certain subs and suppliers; warranty (maintenance) bonds cover defect corrections during a warranty period. Federal contracts may impose additional timelines for maintaining security interests through completion and warranties (NASBP, 2025; FAR, 2025).

Figure 11 highlights that surety performance is conditional and sequence-sensitive.

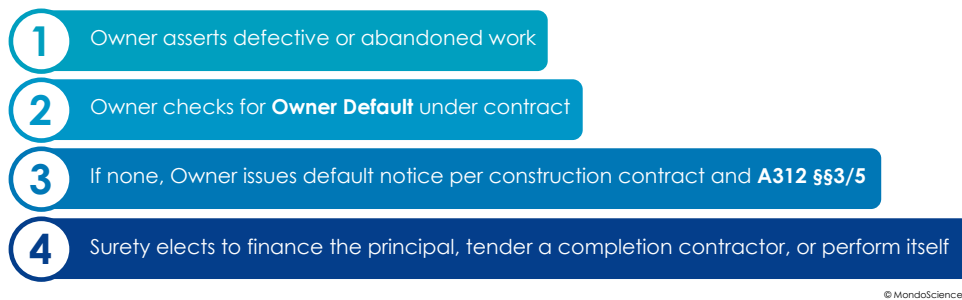


Figure 11: Owner default/contractor default decision tree for A312.

Evidence preservation, documentation, and experts: avoiding spoliation and building credibility

Once litigation is **reasonably anticipated**, organizations must suspend routine deletion and issue a **litigation hold** to preserve potentially relevant electronically stored information (ESI) and documents. Courts can sanction parties for **spoliation** when they fail to preserve evidence they were obliged to keep. The Sedona Conference's guidance provides widely cited, practical principles for triggering and administering legal holds proportionately (Sedona, 2019; Sedona, 2018; Smith Law, 2020).

In construction claims, contemporaneous schedule and cost records are decisive. AACE **Recommended Practice 29R-03** remains a unifying reference for **forensic schedule analysis** methods, while not a standard of practice; it frames transparent method selection and documentation for delay analysis (AACE, 2011; ENR, 2023).

Closeout and the long tail: final payment, correction period, repose, ERP/tail, and last notices

Under AIA A201 §9.10.4, **final payment** generally constitutes a **waiver of certain owner claims** (with carved-out exceptions), while the contractor's acceptance of final payment waives its claims unless previously preserved in writing. The one-year **period for correction of the Work** runs after Substantial Completion, with specific extension mechanics for late-performed portions (AIA, 2017).

Two legal clocks often outlive project turnover: state **statutes of limitations** and **statutes of repose** for construction claims. These vary widely by jurisdiction (and often by claim type) and can extend exposure many years; align document retention and ERP/tail decisions accordingly (SDV, 2024).

For claims-made PL, closing a project or firm without arranging an **extended reporting period (ERP/tail)** can strand liabilities. Before policy expiry, consider issuing "notice of circumstances" where appropriate; verify that the **retroactive date** remains intact across renewals, mergers, or practice wind-downs (IRMI, 2023; IRMI, 2019).

Project closeout is when legal and insurance clocks realign (see Table 29). Verify waivers, secure tails, keep the retro date, and avoid releasing surety security before contract obligations truly end.

Table 29 End-of-project insurance checklist (engineer's perspective)

Item	What you are verifying	Why now
Final contract waivers (A201 §9.10.4)	Claims preserved in writing; closeout deliverables accepted	Avoid unintended waiver at final payment (AIA, 2017).
ERP/tail purchase (PL; any PSPL)	Tail length consistent with client/board requirements and repose period	Claims-made continuity after retirement/M\&A (IRMI, 2023).
Retro date continuity	No reset of prior-acts across renewal or transaction	Keeps legacy work covered (IRMI, 2019).
Open "circumstances"	Timely reports under policy wording	Anchors matters to the expiring policy year (IRMI, 2023/2023a).
Surety release conditions	Bond release timing vs warranty/closeout obligations	Ensures no premature release of security (FAR, 2025; NASBP, 2025).

Conclusion

Claim outcomes reflect disciplined **notice**, **tender**, and **documentation** more than rhetoric. On the contract side, follow AIA Article 15's sequence and deadlines. On the insurance side, give **early, multi-track notice** (own policies and AI tenders). Expect **reservation-of-rights** letters, and understand that a **defense** today may still end in **no indemnity** tomorrow.

When surety performance is at issue, respect the A312 bond's conditions in order and keep the owner's own default risk in view. Preserve evidence via timely **litigation holds** and maintain transparent, methodical analyses (e.g., AACE 29R-03).

At closeout, manage waivers, **ERP/tail**, and **retro dates**, and map retention to state statutes of **repose**. When you match the contract, the policy, and the chronology, tenders land where intended and engineering firms avoid uninsured surprises.

Chapter 11: International Projects, Export Controls, And Cross-Border Liability



Engineering practices headquartered in the United States increasingly deliver services and projects across borders. International work changes the risk profile in three ways. First, the insurance architecture must comply with local “admitted” insurance laws while maintaining global consistency of limits and terms. Second, cross-border contracts typically require on-demand guarantees or standby credits rather than U.S.-style surety bonds, shifting credit and cash-flow risks. Third, U.S. extraterritorial regulatory regimes—export controls, economic sanctions, and antiboycott rules—attach to the people, data, drawings, and payments that move with a project. This chapter explains each of these dimensions and provides a practical framework for U.S. professional engineers (PEs) to structure insurances, bonding/guarantee instruments, and compliance controls that stand up to scrutiny by owners, lenders, and regulators (ICC, 2020; UNCITRAL, 1958/ongoing).

Global Insurance Architecture: Local Admittance, CMPs, and DIC/DIL

Many jurisdictions restrict or prohibit “non-admitted” insurance, meaning coverage must be issued locally by a licensed carrier. To maintain consistency of risk transfer, U.S. firms commonly place a Controlled Master Program (CMP): local admitted policies in each country, coordinated with a U.S. master policy that provides Difference-in-Conditions (DIC) and Difference-in-Limits (DIL) to “fill in” gaps and harmonize limits worldwide (Chubb, 2022; Swiss Re Corporate Solutions, 2022).

Where non-admitted issuance is not permitted, some programs insure the U.S. parent’s Financial Interest in its foreign subsidiary (often called “FinC” or “FIC”) under the master; this does not replace locally compulsory insurance but can protect the parent’s balance sheet from uncovered subsidiary losses (AIG, 2021).

Table 30: Building Blocks of a Multinational Insurance Program (CMP)

Component	Purpose	Comment
Local admitted policies (host country)	Comply with host-country insurance, tax, and compulsory-cover rules; satisfy contract requirements	Required in many countries; failure can lead to fines or unenforceable coverage (Chubb, 2022; AIG, 2021)
Master policy (home country)	Sets global terms/limits.	Written to the parent; coordinates with locals via DIC/DIL (Chubb, 2022; Swiss Re, 2022).
DIC/DIL clauses	"Top up" inferior local terms/limits to master standard	Critical where local wordings or limits are narrower (Chubb, 2022; Swiss Re, 2022)
Financial Interest Cover (FIC)	Indemnify the parent for loss in value of its foreign subsidiary due to an otherwise uninsured loss	Used where non-admitted is restricted; not a substitute for compulsory local insurance (AIG, 2021).

Controlled Master Program (CMP) Flow:

- Parent company places a U.S. master policy (global terms/limits).
- Local subsidiaries hold admitted local policies issued in-country.
- If a local loss exceeds local limits or falls outside local terms but would be covered by the master, the master responds through DIC/DIL to protect the group. (Chubb, 2022; Swiss Re, 2022).

CMPs reconcile local compliance with global uniformity by pairing local policies with a DIC/DIL-enabled master.

Specialty International Covers for Engineers and EPC Projects

Contractors' All Risks (CAR) and Erection All Risks (EAR) policies are widely used outside the United States to insure the works, plant, and third-party liability during construction/installation and testing/commissioning. EAR is geared to installation of mechanical/electrical plant and includes testing/commissioning risks; CAR is broader for civil works and project sites (Munich Re/HSB, 2023; Allianz Commercial, 2025; Munich Re, 2021). Where delay-in-start-up (DSU/ALOP) risk exists, extensions may be available subject to local regulation.

International transit for long-lead items (turbines, switchgear, bridge components) is commonly insured under marine cargo insurance using Institute Cargo Clauses (A/B/C). Clause A is "all risks" subject to listed exclusions and usually integrates War and Strikes clauses via separate wordings; warehouse-to-warehouse terms typically apply (IUA/LMA, 2009; LMA JCC, 2008; If Insurance, 2009).

Outside the U.S., CAR/EAR plus robust cargo cover are the backbone of project risk transfer; pay attention to testing/commissioning and DSU triggers (Munich Re/HSB, 2023; Allianz Commercial, 2025).

People Risk: Defense Base Act, FVWC, and Local Employers' Liability

If you perform work overseas on U.S. government contracts or on U.S. military bases, the Defense Base Act (DBA), 42 U.S.C. §§ 1651–54, mandates workers' compensation-type benefits and insurance for eligible employees; DBA coverage

sits atop the Longshore and Harbor Workers' Compensation Act and is enforced by the U.S. Department of Labor (DOL, 2025; DOL, 2025b; FAR 52.228-3). Separately, Foreign Voluntary Workers' Compensation (FVWC) is widely purchased by U.S. employers for employees traveling or stationed abroad to extend comp-like benefits, repatriation, and employers' liability where state WC does not apply; it is not a substitute for compulsory host-country insurances (IRMI, 2025; Woodruff Sawyer, 2018; NYCIRB, 2000).

Government work abroad triggers DBA; commercial assignments often require FVWC plus host-country employers' liability/social insurance to remain compliant (DOL, 2025; IRMI, 2025).

Economic Sanctions, OFAC Screening, and Insurance Sanctions Clauses

U.S. economic sanctions administered by the Office of Foreign Assets Control (OFAC) bar dealings with embargoed jurisdictions, prohibited end-uses, and parties on the Specially Designated Nationals (SDN) List. The "50 Percent Rule" deems an entity blocked if, in the aggregate, one or more blocked persons own 50% or more—even if the entity is not named—so counterparties and beneficiaries on bonds/guarantees must be screened (OFAC, 2024a; OFAC FAQ 538/398, 2024).

OFAC's Compliance Framework sets out risk-based elements for screening, list management, escalation, and training (OFAC, 2019). Many international insurance policies include the London Market LMA3100/A sanctions limitation clause, suspending cover/claims where payment or performance would breach sanctions; engineers should expect these clauses in CAR/EAR, cargo, and liability policies (LMA, 2023; Lloyd's, 2015; LMA, 2024).

Sanctions compliance is part of project execution. Screen owners, lenders, subcontractors, shippers, and banks at onboarding and before each payment/call on security (OFAC, 2019; OFAC, 2024a).

Export Controls: EAR, ITAR, and "Deemed Exports"

Export control risk arises whenever project drawings, models, source code, or specifications cross borders, or are "released" in the United States to foreign nationals. The Export Administration Regulations (EAR, 15 CFR 730–774) control "dual-use" items and technology via ECCNs; EAR99 items are generally low-controlled but can still require licenses based on destination, end-use, or end-user (BIS, 2025a; ITA, 2025).

The International Traffic in Arms Regulations (ITAR, 22 CFR 120–130) control defense articles, services, and "technical data," defined broadly to include drawings, plans, and instructions required for design/manufacture of USML items (22 CFR 120.33; eCFR, 2025).

A "deemed export" occurs when controlled technology is released to a foreign person in the United States; releases abroad are "reexports" or "deemed reexports," and licensing may be required (BIS, 2025b; BIS, 2025c).

Treat CAD/BIM models, test data, and firmware as potentially controlled. Classify, screen, and license before sharing, and build "clean room" processes in joint

ventures to segregate ITAR/EAR-controlled technical data (BIS, 2025a; 22 CFR 120.33).

International Antiboycott Rules and Tax Reporting

U.S. antiboycott rules under EAR Part 760 prohibit certain actions taken with the intent to comply with unsanctioned foreign boycotts and impose reporting to BIS of boycott requests. Separately, the Internal Revenue Code requires annual filing of IRS Form 5713 if you have operations in or related to listed boycott countries, with potential loss of tax benefits (BIS/OAC, 2024; IRS, 2025a; IRS, 2018). Procurement forms and letters of credit occasionally embed boycott-related language, engineers should route such terms to counsel for removal and file required reports (BIS, 2024).

Add boycott screening to your document review playbook, especially for Middle East procurements and bank instruments (BIS/OAC, 2024; IRS, 2025a).

Cross-Border Contracting: Incoterms®, Arbitration, and Enforcement

When supplying equipment or engineered products, use Incoterms® 2020 to allocate delivery, risk transfer, customs clearance, and cargo insurance obligations, aligning the chosen term (e.g., CIP or CIF) with your marine insurance strategy (ICC, 2020; U.S. ITA, 2025). For dispute resolution, international arbitration governed by robust institutional rules (e.g., ICC Arbitration Rules 2021) and seated in a New York Convention state improves the enforceability of awards; as of 2025, 170+ states are parties (ICC, 2021; New York Convention, 2025).

Align title/risk with cargo insurance under Incoterms, and select an arbitration seat within a New York Convention jurisdiction to preserve enforcement (ICC, 2020; UNCITRAL/NYC, 2025).

Guarantees, Standbys, and Surety in International Projects

Outside the U.S., owners and multilateral lenders typically require on-demand bank guarantees or standby letters of credit for bid, performance, advance-payment, and retention securities. Standard forms often reference ICC Uniform Rules for Demand Guarantees (URDG 758), and multilateral procurement documents include on-demand bank guarantee templates (ICC, 2010; World Bank, 2023; World Bank, 2021).

FIDIC contracts (2017 suite) anticipate “demand guarantees” for performance security; calls are generally payable against conforming documents, with limited defenses (FIDIC/ADB, 2018; Freshfields, 2021). This differs from U.S. surety bonds, which are conditional and tripartite; in some markets they are not accepted or are “bank-fronted” by an issuing bank to meet local norms (Travelers, 2025).

On-demand bank guarantees vs. U.S. surety bonds:

- **Issuer:** Bank (guarantee/standby LC) vs. Insurer/surety company (surety bond).
- **Trigger:** Documentary demand “on first demand” with limited defenses vs. default proven under underlying contract conditions.
- **Cash-flow impact:** Typically ties up bank credit/collateral vs. preserves bank lines; indemnity to surety but less immediate cash collateral.

- **Governing rules:** URDG 758/ISP98/ICC rules; often on-demand forms in FIDIC/MLI docs vs. U.S. statutory/contract surety practice.
- **Summary:** Expect on-demand instruments abroad. Budget bank capacity or arrange bank-fronted surety where pure surety is not accepted (World Bank, 2021; FIDIC/ADB, 2018; ICC, 2010; Travelers, 2025).

Political Risk and Force-Majeure Adjacent Covers

Political risk insurance (PRI) can protect equity, debt, and contractual rights against expropriation, currency inconvertibility, breach of contract, and political violence. U.S.-backed and multilateral options include the U.S. International Development Finance Corporation (DFC) and the World Bank Group's Multilateral Investment Guarantee Agency (MIGA) (DFC, 2024; MIGA, 2025). These instruments are frequently required in project finance to stabilize country risk and can be layered with private PRI.

PRI is a lender-friendly tool to de-risk emerging-market exposure for engineering, procurement, and O&M commitments (DFC, 2024; MIGA, 2025).

Data Protection and Cross-Border Transfers

If a project involves EU data subjects (e.g., sensor telemetry linked to individuals, site worker data, or customer PII), the EU General Data Protection Regulation (GDPR) applies extraterritorially. Cross-border data transfers require an adequacy decision or Standard Contractual Clauses, alongside privacy-by-design controls and minimization (European Commission, 2025; EC Legal Framework, 2025).

Map personal data flows in IoT/SCADA/maintenance regimes and build SCCs or equivalent safeguards before exporting data from the EEA (European Commission, 2025).

A Practical Compliance and Risk-Transfer Checklist

Table 31: Cross-Border Compliance Checkpoints

Checkpoint	What to do	Evidence
Counterparty/supply chain screening	Screen owners, contractors, logistics providers, and banks against SDN and other OFAC lists; apply the 50% Rule	Screening records; escalation memos (OFAC, 2024a; 2024b)
Export classification	Determine ECCN/EAR99 status; assess ITAR applicability to any sub-assemblies or drawings; evaluate "deemed export" risk	Classification memos; license determinations; TAA/MLA if ITAR (BIS, 2025a; eCFR 22 CFR 120.33)
Insurance placement	Confirm local-admitted requirements; implement CMP with DIC/DIL; place cargo and CAR/EAR with appropriate testing/DSU	Local policies; master with DIC/DIL; certificates aligned to Incoterms (Chubb, 2022; Swiss Re, 2022; IUA, 2009)
Security instruments	Use on-demand URDG-compliant guarantees/standbys per contract; consider bank-fronted surety where needed	Final guarantee texts; bank confirmations; diary for expiry/extend-or-pay terms (ICC, 2010; World Bank, 2021; FIDIC/ADB, 2018)
Antiboycott vigilance	Scrub procurement/LC/contract forms for boycott requests; file BIS reports and IRS Form 5713 as required	Redlines; filed reports; internal training logs (BIS/OAC, 2024; IRS, 2025a)
Data protection	SCCs or other transfer tools for EU/UK personal data; vendor DPAs	SCCs; RoPA; DPIAs (European Commission, 2025)

Conclusion

International projects magnify risk, not only from new perils, but from the legal systems that govern how you insure, secure, share, and pay.

- For insurance, pair local admitted policies with a master that provides DIC/DIL and, where appropriate, FInC.
- For security, anticipate on-demand guarantees rather than conditional surety bonds, and align the wording with FIDIC or multilateral forms.
- For compliance, operationalize screening and export classification as project-delivery tasks, no drawing, model, or part leaves (or is shared domestically with a foreign person) without an EAR/ITAR check, and no party gets paid without OFAC clearance.
- Finally, shepherd data across borders with the same discipline you apply to physical shipments: document provenance, lawful basis, and transfer tools.

When these pillars, insurance architecture, financial security, and regulatory compliance, are integrated at bid stage and revisited before each milestone, U.S. engineers can operate globally with confidence and contract certainty.

Chapter 12: Worked Case Studies: Applying Insurance, Bonding, and Compliance in Real Projects

Each of the following cases maps contract decisions to the right insurance/bonding instruments, export/sanctions controls, and documentation.

Case A: Latin America EPC water-treatment plant (owner-financed)

Commercial posture and risk map

The owner issues an EPC contract based on a civil-law template that requires **on-demand performance security** and local insurance. The EPC's U.S. parent wants uniform risk transfer. The project includes overseas manufacture of pumps and switchgear, sea carriage, inland haulage, erection/commissioning, and wet testing. The contract proposes **CIF** for major sea legs and requires arbitration seated outside the host country.

Insurance architecture

Many jurisdictions restrict or prohibit **non-admitted insurance**, so the EPC establishes a **Controlled Master Program (CMP)**: host-country admitted policies coordinated with a U.S. **master** that provides **Difference-in-Conditions/Difference-in-Limits** (DIC/DIL) to "top up" local terms and limits.

Where truly non-admitted policies cannot be issued or a subsidiary cannot be named, the master may include **Financial Interest Cover (FIC/FINC)** for the U.S. parent (Chubb, 2022; Swiss Re Corporate Solutions, 2022; AIG, 2021).

The project places **CAR/EAR** for works/erection and testing, often with **Delay in Start-Up (DSU/ALOP)** where permissible; **marine cargo** uses **Institute Cargo Clauses (A), 2009** ("all risks") plus war/strikes clauses (IUA/LMA, 2009; If Insurance, 2009; Allianz Commercial, 2025; Munich Re/HSB, 2023).

Incoterms® and cargo handoff

The owner's draft uses **CIF** by habit. For engineered equipment with inland legs and multimodal transits, **CIP** (seller arranges carriage and insurance to named place) or **FCA** (buyer's forwarder pick-up) often fits better operationally; the team aligns the chosen rule with the cargo insurance and documentary requirements (ICC, 2020; U.S. ITA, 2025).

Security instrument

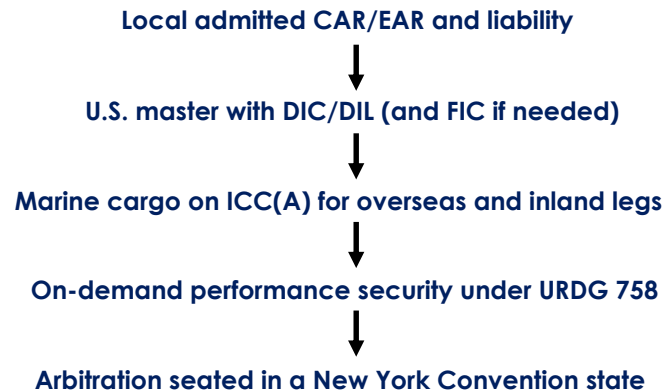
The contract requires a **performance security** "on first demand." Outside the U.S., on-demand **bank guarantees** or **standby letters of credit** are common; multilateral templates and the **URDG 758** rules govern form and presentation. Where local practice disfavors surety bonds, sponsors may insist on pure on-demand instruments; bank-fronted surety is a fallback (World Bank, 2017/2021; ICC, 2010; Travelers, 2025).

Dispute resolution and enforceability

Seats in **New York** or **Miami** keep neutrality and access to courts that support arbitration. Because the **New York Convention** broadly ensures cross-border enforcement where the host state is a party, award collectability improves

(NewYorkConvention.org, 2025; UN Treaty Collection, 1958). (New York Convention, 2025; UN, 1958.)

Local compliance, master back-stops, and on-demand security align to reduce enforcement friction.



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Figure 12: CMP and contract flow for Case A

Case B: U.S. OEM ships skid-mounted process units to the EU with remote monitoring

Commercial posture and risk map

A U.S. OEM sells skids to a German buyer. The contract includes factory acceptance tests, **CIP Hamburg Incoterms® 2020**, and remote performance telemetry for two years. Risks include cargo loss, delay, product liability, **dual-use** export controls if embedded crypto/sensors exist, and **personal-data** transfer obligations for telemetry.

Cargo and title/risk

Under **CIP**, the U.S. seller arranges carriage and **insurance** to the named place; the seller must procure insurance at least meeting the Incoterms® 2020 CIP standard (which references an “all risks” level); ICC(A) 2009 is commonly used in practice (ICC, 2020; IUA/LMA, 2009; If Insurance, 2009).

EU export controls (dual-use)

If the skid or its firmware falls under the **EU Dual-Use Regulation (EU) 2021/821**, re-exports, brokering, and technical assistance can require licensing; the buyer's integration activities can also trigger controls. U.S. exporters should coordinate EU licensing via the buyer and recognize that EU controls operate alongside U.S. EAR rules for the outbound U.S. shipment (European Commission, 2025; EUR-Lex, 2021). (EC Dual-Use, 2025; EUR-Lex, 2021.)

Data flows (remote monitoring)

Telemetry that contains **personal data** (e.g., user identifiers, maintenance logs linked to staff) triggers EU **GDPR** transfer rules. The OEM uses **Standard Contractual Clauses (SCCs)** for data transfers to the U.S., choosing the proper module and completing transfer impact assessments; UK projects use the **IDTA/Addendum** (European

Commission, 2021–2025; UK ICO, 2025). (EC SCCs Q&A, 2021; EC SCCs page, 2021; ICO, 2025.)

Table 32: Case B: aligning contract, insurance, and compliance

Decision	Practical choice	Why it works
Delivery term	CIP Hamburg (Incoterms® 2020)	Seller controls carriage/insurance to named place; aligns with ICC(A) "all risks" cargo. (ICC, 2020; IUA/LMA, 2009.)
Telemetry data	SCCs (EU→U.S.) and UK IDTA as needed	Lawful international transfers with appropriate safeguards. (EC/ICO, 2021–2025.)
Export control	EU 2021/821 + U.S. EAR coordination	Avoids licensing gaps across jurisdictions. (EC/EUR-Lex; BIS EAR.)

CIP plus ICC(A) keeps transit risk orderly; SCCs/IDTA stabilize data flows; dual-use rules apply in **both** legal systems.

Case C: U.S. defense subcontract with mixed EAR/ITAR technical data

Commercial posture and risk map

A U.S. engineering firm supports a prime on a U.S. **DoD** program. The workshare includes **ITAR** drawings (USML-controlled) and **EAR**-controlled firmware; collaboration includes non-U.S. nationals on U.S. soil and overseas suppliers. The contract requires CUI handling and **CMMC** conformance.

Export controls and “deemed exports”

ITAR defines **technical data** broadly (blueprints, plans, instructions) and restricts releases to non-U.S. persons without authorisation; EAR governs dual-use technology. A **deemed export** occurs when controlled technology is released to a foreign person **in the United States** (ITAR 22 CFR § 120.33; BIS “Deemed Exports”). The team classifies each artifact (ECCN or USML), walls off ITAR data (technical-assistance agreements if needed), and implements clean-room protocols for non-U.S. persons (eCFR, 2025; BIS, 2025).

Sanctions screening

All vendors, banks, and counterparties are screened to **OFAC** standards; the **50 Percent Rule** blocks entities owned ≥50% in aggregate by SDNs. Contracts and insurance include sanctions-compliance clauses reflecting this constraint (OFAC, 2019; OFAC FAQ 538).

CMMC/NIST SP 800-171

The program requires protection of **CUI**. **NIST SP 800-171 Rev. 3** is final; DoD has announced CMMC implementation milestones, including **Level 2 self-assessments operational in SPRS as of 28 Feb 2025** and a phased rollout tied to the acquisition rule (DoD CIO, 2025; NIST, 2024; DoD CIO About page, 2025; Federal Register, 2024). The subcontractor maintains assessment records, plan of action & milestones (POA\&M), and supplier-flowdown controls. (DoD CIO CMMC; NIST SP 800-171 Rev. 3; DoD About CMMC; Federal Register CMMC rule.)

Table 33: Case C: export-control and cyber compliance map

Step	Action	Evidence to retain
Classify	USML vs ECCN; mark ITAR/EAR artifacts	Classification memos; USML category/ECCN; TAA/MLA if required. (eCFR; BIS.)
Control access	"Need-to-know," segregated systems; no release to foreign persons absent authorization	Access lists; visitor logs; training and NDAs; enclave configs. (BIS deemed exports.)
CMMC/800-171	Implement controls; post Level-2 self-assessment to SPRS when required	SSP, POA\&M, assessment artefacts, SPRS entry. (DoD CIO; NIST.)

Cross-case lessons and artifacts to collect

- **Certificates and endorsements:** For international projects, **certificates** evidence coverage but do not amend it; collect the **actual endorsements** (AI, PNC, waiver) and local policies to verify admitted status and edition dates.
- **URDG-compliant guarantees and diaries:** Track expiry, extend-or-pay windows, and conditions for calling; keep signed forms and bank confirmations.
- **Arbitration seat and enforcement checklist:** Confirm the **seat**, **institutional rules**, and that all project states are **New York Convention** parties; archive evidence of proper service and notice.
- **Export/data compliance pack:** Retain ECCN/USML determinations, license copies, OFAC screening logs, and SCCs/IDTA. For defense work, keep **SPRS** submissions, SSP/POA&M, and NIST control evidence.

Alignment, more than any single clause, determines claim and enforcement outcomes (Figure 13).

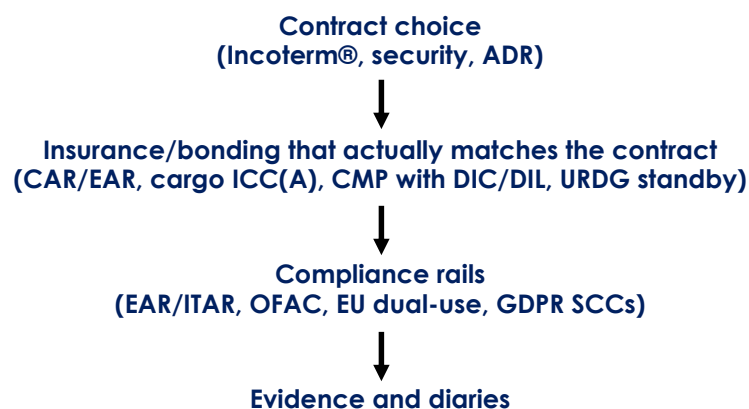


Figure 13: Decision spine across all cases

Conclusion

Across these scenarios, **alignment** is the decisive control. In Latin America EPC, a **CMP** with **DIC/DIL** harmonizes local admitted policies with master terms while on-demand guarantees and a Convention-friendly arbitration seat support enforcement. In EU shipments with telemetry, **Incoterms® 2020** (e.g., CIP) must dovetail with **ICC(A)** cargo wording, while **SCCs** and **EU dual-use** controls are non-negotiable.

For U.S. defense subcontracts, the interplay of **ITAR/EAR**, **OFAC**, and **CMMC/800-171** requires disciplined classification, access control, and auditable cyber posture. Engineers who build their contract, insurance, and compliance stack together, then **document it**, avoid uninsured losses and procedural dead-ends.

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