



GLOSSARY OF POST-TENSIONING TERMS

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General Technologies, Inc. believes that understanding post-tensioning terms is vital to understanding post-tensioning. Therefore, GTI is making available our glossary of post-tensioning terms. The glossary is a combination of several documents from ACI, PTI, and the Union Ironworkers along with our knowledge of the post-tensioning industry. Below please find a matrix of similar terms that are used in post-tensioning. Following the matrix, please find our glossary of post-tensioning terms.

Matrix of Similar Post-Tensioning Terms

POST-TENSIONING TERMINOLOGY MATRIX	
Post-Tensioning Term	Additional Similar Post-Tensioning Terms
Active-End	Live-End, Stressing-End
Active-End Anchorage	Live-End Anchorage, Stressing-End Anchorage
Additive	Admixture
Admixture	Additive
Anchor	Anchorage
Anchor	Ground Anchor, Rock Anchor, Soil Anchor
Anchor Casting	Casting
Anchor Grout	Primary Grout
Anchor Head	Anchor Nut, Detensionable Anchor Head, Restressable Anchor Head, Wedge Plate
Anchor Nut	Anchor Head, Detensionable Anchor Head, Restressable Anchor Head, Wedge Plate
Anchorage	Anchor, Socket
Anchorage Cover	Cap, Cap w/O-Ring, Locking Cap
Anticipated Set	Seating Loss, Wedge-Set
Apparent Free Tendon Length	Free Length, Free Stressing Length
Architect	Design Professional
Back-Up Bars	Bursting Steel, Confinement Reinforcement
Barrel Anchor	Chuck, Donut
Bond Length	Tendon Bond Length
Bulkhead	Edge Form
Burn Ring	Metal Ring
Bursting Steel	Back-Up Bars, Confinement Reinforcement
Cap	Anchorage Cover, Cap w/O-Ring, Locking Cap
Cap w/O-Ring	Anchorage Cover, Cap, Locking Cap
Casting	Anchor Casting
Center-Hole Jack	Center-Hole Ram
Center-Hole Ram	Center-Hole Jack
Chuck	Barrel Anchor, Donut
Coated Strand	Grease & Wrap Strand, Sheathed Strand
Concrete Slurry	Slurry
Confinement Reinforcement	Back-Up Bars, Bursting Steel
Constructor	Contractor
Contractor	Constructor
Corrosion Inhibiting Coating	Grease, PT Coating
Coupler	Multi-Use Splice Chuck, One-Time-Use Splice Chuck, Splice Chuck
Dead-End	Fixed-End
Dead-End Anchorage	Fixed-End Anchorage
Design Engineer	Design Professional, Engineer

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Post-Tensioning Term	Additional Similar Post-Tensioning Terms
Design Load	Final Effective Force
Design Professional	Architect, Design Engineer, Engineer
Detensionable Anchor Head	Anchor Head, Anchor Nut, Restressable Anchor Head, Wedge Plate
Distributed Tendon	Uniform Tendon
Drain	Outlet, Vent
Drape	Eccentricity, Profile, Tendon Profile
Donut	Barrel Anchor, Chuck
Duct	Extruded Sheathing, Sheath, Sheathing
Eccentricity	Drape, Profile, Tendon Profile
Edge Form	Bulkhead
Effective Force	Effective Prestress
Effective Prestress	Effective Force
Engineer	Design Engineer, Design Professional
Erector	Installer, Post-Tensioning Installer
Extruded Sheathing	Duct, Sheath, Sheathing
Final Effective Force	Design Load
Fixed-End	Dead-End
Fixed-End Anchorage	Dead-End Anchorage
Free Length	Apparent Free Tendon Length, Free Stressing Length
Free Stressing Length	Apparent Free Tendon Length, Free Length
Grease	Corrosion Inhibiting Coating, PT Coating
Grease & Wrap Strand	Coated Strand, Sheathed Strand
Grips	Wedges
Grippers	Jack Grippers, Ram Grippers
Grommet	Pocket Former
Ground Anchor	Anchor, Rock Anchor, Soil Anchor
Initial Force	Initial Load, Initial Prestress, Lock-Off Load
Initial Load	Initial Force, Initial Prestress, Lock-Off Load
Initial Prestress	Initial Force, Initial Load, Lock-Off Load
Installation Drawings	Shop Drawings
Installer	Erector, Post-Tensioning Installer
Jack	Ram
Jack Calibrations	Ram Calibrations
Jack Gripper Plates	Ram Gripper Plates
Jack Grippers	Grippers, Ram Grippers
Jacking Force	Stressing Force
Live-End	Active-End, Stressing-End
Live-End Anchorage	Active-End Anchorage, Stressing-End Anchorage
Locking Cap	Anchorage Cover, Cap, Cap w/O-Ring
Lock-Off Load	Initial Force, Initial Load, Initial Prestress
Metal Ring	Burn Ring
Mill Certificate	Mill Cert
Mill Cert	Mill Certificate
Multi-Use Splice Chuck	Coupler, One-Time-Use Splice Chuck, Splice Chuck
One-Time-Use Splice Chuck	Coupler, Multi-Use Splice Chuck, Splice Chuck
Outlet	Drain, Vent
Primary Grout	Anchor Grout
Pocket Former	Grommet
Post-Tensioning Installer	Erector, Installer
Post-Tensioning Supplier	Supplier
Profile	Drape, Eccentricity, Tendon Profile

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Post-Tensioning Term	Additional Similar Post-Tensioning Terms
PT Coating	Corrosion Inhibiting Coating, Grease
Ram	Jack
Ram Calibration	Jack Calibration
Ram Gripper Plates	Jack Gripper Plates
Ram Grippers	Grippers, Jack Grippers
Repair Anchor	Split Donut, Trouble-Shooting Anchor
Restressable Anchor Head	Anchor Head, Anchor Nut, Detensionable Anchor Head, Wedge Plate
Rock Anchor	Anchor, Ground Anchor, Soil Anchor
Seating Loss	Anticipated Set, Wedge-Set
Sheathed Strand	Coated Strand, Grease & Wrap Strand
Sheath	Duct, Extruded Sheathing, Sheathing
Sheathing	Duct, Extruded Sheathing, Sheath
Shop Drawings	Installation Drawings
Sleeve	Tube, Zero Void Seal [®]
Slurry	Concrete Slurry
Socket	Anchor, Anchorage
Splice Chuck	Coupler, Multi-Use Splice Chuck, One-Time-Use Splice Chuck
Split Donut	Repair Anchor, Trouble-Shooting Anchor
Split Grommet	Split Pocket Former
Split Pocket Former	Split Grommet
Soil Anchor	Anchor, Ground Anchor, Rock Anchor
Stay Cable	Tendon
Stressing-End	Active-End, Live-End
Stressing-End Anchorage	Active-End Anchorage, Live-End Anchorage
Stressing Force	Jacking Force
Stressing Tail	Tail, Tendon Tail
Supplier	Post-Tensioning Supplier
Tail	Stressing Tail, Tendon Tail
Tendon	Stay Cable
Tendon Bond Length	Bond Length
Tendon Profile	Drape, Eccentricity, Profile
Tendon Tail	Stressing Tail, Tail
Trouble-Shooting Anchor	Repair Anchor, Split Donut
Tube	Sleeve, Zero Void Seal [®]
Uniform Tendon	Distributed Tendon
Vent	Drain, Outlet
Wedge Plate	Anchor Head, Anchor Nut, Detensionable Anchor Head, Restressable Anchor Head
Wedges	Grips
Wedge-Set	Anticipated Set, Seating Loss
Zero Void Seal [®]	Sleeve, Tube

Glossary of Post-Tensioning Terms

Acceptance Criteria: Specified limits placed on the performance, results, or other characteristics of an item, process, or service defined in codes, standards, or other requirement documents.

Active-End: End of the tendon where field stressing operations occur.

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Active-End Anchorage:	Anchorage at the end of a tendon where the stressing jack is attached to the tendon during stressing operations.
Added Tendons:	Tendons, usually short in length, placed in specific locations such as end bays to increase the structural capacity at that location without having to use full-length tendons.
Additive:	Material that may be used as an addition to concrete or grout.
Admixture:	Material other than water, aggregate, or hydraulic cement, used as an ingredient of concrete or grout and added to concrete or grout before or during its mixing to modify its properties.
Aggressive Environment:	Environment in which structures are exposed to direct or indirect applications of deicing chemicals, seawater, brackish water, or spray from these water sources; and salt-laden air as occurs in the vicinity of seacoasts. Aggressive environments also include structures where stressing pockets are wetted or are directly in contact with soils.
Alignment Load:	Nominal minimum load applied to a tendon (ground anchor) during testing to keep the testing equipment correctly positioned.
Anchor:	Mechanical device comprising all components required to anchor the prestressing steel and permanently transmit the prestressing force to the structure.
Anchor:	System used to transfer tensile loads to the ground (soil or rock), which includes the prestressing steel, anchorage, corrosion protection, bond breaker, spacers, centralizers, and grout.
Anchor Adaptor:	Plastic fitting that provides a watertight connection between certain encapsulated anchors and tube (sleeve).
Anchor Casting:	For single strand unbonded tendons, normally a ductile iron casting which houses the wedges and is used to transfer the prestressing force to the concrete.
Anchor Cavity:	Opening in the anchor or anchor block designed to accommodate the strand passing through and the proper seating of the wedges.
Anchor Grout:	Grout or polyester resin that is injected into the ground anchor drill hole prior to or after the installation of the ground anchor tendon to allow the tendon to transfer load to the surrounding ground along the bond length of the tendon.
Anchor Head:	Device by which the prestressing force is permanently transmitted from the prestressing steel to the bearing Plate (wedges and wedge plate for strand tendons or anchor nut for bar tendons).
Anchor Nut:	Threaded device that screws onto a threaded bar and transfers the force from the bar to the bearing plate.
Anchorage:	Mechanical device comprising all components required to anchor the prestressing steel and permanently transmit the prestressing force to the concrete.
Anchorage Cover:	Cover to protect the anchorage from corrosion and physical damage.

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- Anchorage Length:** Length of cable within the Socket (cable-stay) including that length of cable where the tensile elements are directed into the Socket and the unstressed strand behind wedges or other MTE anchors.
- Anchorage Zone:** Region of the concrete member through which the concentrated prestressing force is transferred to the concrete and distributed across the section. Its extent is equal to the largest dimension of the cross section. For anchorage devices located away from the end of the member, the anchorage zone includes the disturbed regions ahead of and behind the anchorage.
- Anticipated Set:** Relative movement of the wedges into the anchor cavity during the transfer of the prestressing force to the anchorage resulting in some loss of prestressing force.
- Apparent Free Tendon Length:** Length of tendon that is apparently not bonded to the surrounding grout or structure, as calculated from the elastic load extension data during testing.
- Architect:** Person, firm, or organization responsible for preparing the contract documents of the project.
- AUTS:** Actual Ultimate Tensile Strength
- Back Stressing:** Stressing procedure that ensures that the wedges are properly seated into the anchor by pulling the wedges into the anchor cavity.
- Back-Up Bars:** Reinforcing steel placed in concrete in the anchorage zone to position the anchor and help in distributing forces from the stressed tendon.
- Banded Tendons:** Group(s) of closely spaced tendons in slabs placed together in a narrow strip usually, along a column line.
- Bar:** Bars used in post-tensioning tendons conform to ASTM A722, *Standard Specification for Uncoated High-Strength Steel Bar for Prestressing Concrete*. Bars have a minimum ultimate tensile strength of 150,000 psi (1035 MPa). Type 1 Bar has a plain surface and Type 2 Bar has surface deformations.
- Barrel Anchor:** Cylindrical metal device housing the wedges and normally used with a bearing plate to transfer the prestressing force to the structure.
- Barrier:** covering over the main tension element that protects the main tension element from corrosion. A barrier may provide protection by physical or electro-chemical means, or through a combination of the two.
- Barrier Cable:** High strength steel strands erected around the perimeter of a structure and at open edges of ramps to prevent automobiles and pedestrians from falling over the open sides. The strands are usually protected by galvanizing, epoxy-coating, or plastic coating.
- Basket Weave:** Technique that was used to place distributed tendons in both directions in two-way slabs; this technique is no longer used.
- Bearing Plate:** Plate which bears directly against the structure and is part of an overall anchorage system.

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Bleed:	Autogenous flow of mixing water within, or its emergence from, newly placed grout; caused by the settlement of the solid materials within the mass and filtering action of strands, wires, and bars.
Blocking Agent:	Filler or coating that serves to prevent the passage of water to or around the main tension element.
Blowout:	Localized concrete failure that occurs during or after stressing. A blowout may be explosive in character.
Bond Breaker:	Sleeve placed over the prestressing steel in its free stressing length to allow elongation of the prestressing steel during stressing.
Bonded Tendon:	Tendon in which prestressing steel is bonded to concrete either directly or through grouting. Typically, the tendon is contained in a plastic (or metal) duct.
Bond Length:	Length of grout body that transmits the applied tensile load to the structure.
Bulkhead:	Formwork used to limit the horizontal spread of fresh concrete on flat surfaces such as floors.
Burn Ring:	Metal ring cast into the stressing-end of plastic encapsulated anchors to permit cutting of the strand with an oxyacetylene torch.
Bursting Steel:	Reinforcing steel used to control the tensile bursting forces developed at the bearing side of the anchor as the concentrated anchor force from the stressed tendon spreads out in all directions.
Cable:	Term used by some to denote a prestressing strand or a single-strand tendon.
Camber:	Upward deformation caused by the application of a prestressing force. Camber is sometimes intentionally built into a structural element or form to improve appearance or to nullify the deflection of the element under the effects of loads, shrinkage, and creep.
Cantilever:	Any horizontal structural member projecting beyond its vertical support.
Cap:	Typically, a plastic cap used in encapsulation systems to protect the wedge cavity from moisture infiltration and contain pt coating around the tendon tail and wedges.
Cap w/O-Ring:	Typically, a plastic cap used in encapsulation systems when oxyacetylene Torch Cutting is used.
Cast:	Amount of curvature of a length of strand that is not restrained when placed on a flat surface.
Casting:	For single strand unbonded tendons, normally a ductile iron casting which houses the wedges and is used to transfer the prestressing force to the concrete.
Cementitious Materials:	Materials having cementing properties.
Center-Hole Jack:	Mechanical device (normally hydraulic), with a hole in the center for the prestressing steel to pass through, used for applying force to the prestressing tendon.

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Center-Hole Ram:	Mechanical device (normally hydraulic), with a hole in the center for the prestressing steel to pass through, used for applying force to the prestressing tendon.
Centralizer:	Non-load bearing device used to maintain clearance between the duct/pipe/hole and main tension element.
Certificate of Conformance:	Documentation from the manufacturer that confirms that the quality of material supplied meets all project requirements.
Chair:	Hardware used to support or hold post-tensioning tendons and reinforcing bars in their proper position to prevent displacement before and during concrete placement.
Chuck:	Cylindrical metal device housing the wedges and normally used with a bearing plate to transfer the prestressing force to the structure.
Coated Strand:	Strand coated with pt coating and covered by an extruded polyethylene or polypropylene sheathing.
Coating:	Material used to protect against corrosion and reduce friction between prestressing steel and sheathing.
Compression:	Force that compresses or crushes a member.
Concrete Slurry:	Cementitious paste mixed with aggregate fines when making ready-mix concrete.
Confinement Reinforcement:	Reinforcing steel used to control the tensile bursting forces developed at the bearing side of the anchor as the concentrated anchor force from the stressed tendon spreads out in all directions.
Consolidation Grout:	Grout that is injected into the ground anchor drill hole, prior to tendon grouting, to either reduce the permeability of the rock immediately surrounding the hole or to otherwise improve the ground conditions.
Construction Engineer:	Person, firm, or organization engaged by the Owner to act as the Owner's representative and be responsible for the overall technical oversight and contract administration to ensure that the project is constructed in accordance with contract documents.
Constructor:	Person, firm, or organization who had entered into a contractual agreement with the Owner to construct the project and who has the prime responsibility for the overall construction of the project in accordance with contract documents.
Contractor:	Person, firm, or organization who had entered into a contractual agreement with the Owner to construct the project and who has the prime responsibility for the overall construction of the project in accordance with contract documents.
Corrective Action:	Measures taken to rectify conditions adverse to quality and, where necessary, to preclude repetition.
Corrosion Inhibiting Coating:	Material used to protect against corrosion and reduce friction between prestressing steel and sheathing (commonly called grease).

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Coupler:	Device designed to connect ends of two strand ends together, thereby creating a continuous tendon by transferring the prestressing force from one strand to the next.
CPS:	GTI's Corrosion Protection System.
Creep:	Time-dependent deformation of concrete under a sustained stress (load). This deformation results in the loss of a small portion of the prestressing force due to shortening of the concrete and the prestressing steel.
Creep Movement:	Movement that occurs under a constant load and as measured during the creep test of a ground anchor.
Curvature Friction:	Friction resulting from bends or curves in the specified prestressing tendon profile.
Dead-End:	End of the tendon where field stressing operations do not occur.
Dead-End Anchorage:	Anchorage at the end of the tendon where field stressing operation does not occur. Fixed-End Anchorages are typically attached to the tendon at the fabrication plant.
Design Engineer:	The person, firm, or organization responsible for preparing the structural content of the contract documents for the project.
Design Load:	Final effective load in the tendon after allowance for time dependent losses or gains.
Design Professional:	Person, firm, or organization responsible for preparing the contract documents of the project.
Detensionable Anchor Head:	Anchor head that permits the tendon to be completely detensioned in a controlled way at any time during the life of a structure and is restressable.
Detensioning:	Releasing the prestressing force from the tendon.
Deviator:	Component that serves to deviate the path of a tendon.
Distributed Tendons:	Single or group of tendons in a slab that are uniformly distributed, usually perpendicular to the banded tendons, beams, or walls.
Donut:	Cylindrical metal device housing the wedges and normally used with a bearing plate to transfer the prestressing force to the structure.
Drain:	Opening to allow the escape of air, water, grout, and bleed water from the duct during grouting operations.
Drape:	Vertical deviation (path) a tendon follows from end to end.
Duct:	Plastic (steel) material forming a conduit (plain or corrugated) to accommodate prestressing steel for post-tensioning installation.
Eccentricity:	Distance between the center of gravity of the concrete cross-section and center of gravity of the prestressing steel at any point along the length of a member.

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Edge Form:	Formwork used to limit the horizontal spread of fresh concrete on flat surfaces such as floors.
Effective Force:	Prestressing force at a specific location in a prestressed concrete member after all losses have occurred.
Effective Prestress:	Prestressing force at a specific location in a prestressed concrete member after all losses have occurred.
Elastic Movement:	Recoverable movement measured during a ground anchor test.
Extruded Sheathing:	Extruded polyethylene or polypropylene material encasing prestressing steel to prevent bonding of the prestressing steel with the surrounding concrete, provide corrosion protection, and contain the pt coating or grout.
Final Effective Force:	Final effective force in the tendon after allowance for all time dependent losses.
Fixed-End:	End of the tendon where field stressing operations do not occur.
Fixed-End Anchorage:	Anchorage at the end of the tendon where field stressing operation does not occur. Fixed-End Anchorages are typically attached to the tendon at the fabrication plant.
Elastic Shortening:	Shortening of a member that occurs immediately after the application of the prestressing force.
Elongation:	Increase in the length of the prestressing steel under the applied prestressing force.
Encapsulated System:	Post-tensioning system that prevents the ingress of water into the tendon during all stages of construction, and isolates the strand and anchorage from contact with concrete or soil.
Engineer:	The person, firm, or organization responsible for preparing the structural content of the contract documents for the project.
Epoxy-Coating:	Product containing pigments, thermosetting epoxy resins, cross linking agents, and other additives that is applied in the form of a powder onto a clean, heated metallic substrate and fuses to form a continuous barrier coating.
Erector:	Contracting entity responsible for unloading the post-tensioning materials, storing and protecting them on the job site at all stages of handling, storage, placement, tendon installation, stressing, and tendon finishing in accordance with the contract documents and specifications.
External Barrier;	Barrier that is exposed to the outside environment in the design condition for the barrier.
Final Set:	Degree of stiffening of the grout mixture greater than the initial set, indicating the time in hours and minutes required for the grout to stiffen sufficiently to resist, to an established degree, the penetration of a weighted test needle.
Fluidity:	Measure of time, expressed in seconds, necessary for a stated quantity of grout to pass through the orifice of the flow cone.

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Force:	When used in post-tensioning applications, force is the load applied to the structure by the tendon.
Free Length:	(Stay-Cables) Length of a tendon beyond the anchorage and transition assembly that affects the main tension element, such as trumpets, tension rings, or other strand guides.
Free Length:	(Ground Anchors) Designed tendon length that is not bonded to the surrounding ground or grout during stressing.
Free Stressing Length:	(Ground Anchors) Designed tendon length that is not bonded to the surrounding ground or grout during stressing.
Friction Loss:	Loss of force in a prestressing tendon resulting from friction created between the strand and sheathing due to curvature and wobble during stressing.
Fully Bonded Anchor:	Ground anchor in which the free stressing length without bond breaker is surrounded by grout after stressing, and so is bonded to the surrounding structure or ground.
Gauge:	Device used to measure the hydraulic pressure delivered by the hydraulic pump.
Gel Time:	Time between the start of mixing of a polyester resin with the catalyst and the point at which the liquid phase changes to a viscous state.
Grease:	Material used to protect against corrosion and reduce friction between prestressing steel and sheathing (commonly called grease).
Grease & Wrap Strand:	Strand coated with pt coating and covered by an extruded polyethylene or polypropylene sheathing.
Grips:	Pieces of tapered metal with serrations, which bite into the prestressing steel (strand) during transfer of the prestressing force.
Grippers:	Wedges used in the jack to hold the strand during the stressing operation.
Grit:	Fine-grained material impregnated onto the outer surface of epoxy coating, which improves the epoxy-coating bond to the grout.
Grommet:	Temporary device used at the stressing-end during concrete casting to provide an opening in the concrete that will allow the stressing equipment access to the anchor.
Ground Anchor:	System used to transfer tensile loads to the ground (soil or rock), which includes the prestressing steel, anchorage, corrosion protection, bond breaker, spacers, centralizers, and grout.
Grout:	Mixture of cementitious materials and water, with or without mineral additives, admixtures or fine aggregate, proportioned to produce a pumpable consistency without segregation of the constituents; injected into the duct to fill the space around the tendon.
Grout Sock:	Geo-textile encasement around all or part of the ground anchor length, used to control grout loss in certain highly permeable ground conditions.

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Hand Seating Tool:	Small handheld device used to properly align (seat) the wedges in the anchor prior to positioning the jack on the strand for stressing.
HDPE:	Acronym for High Density Polyethylene plastic.
Holiday:	discontinuity in a coating that is not discernible to a person with normal or corrected vision.
Honeycombing:	Voids, rock pockets, or sand pockets in the concrete caused by inadequate consolidation.
Initial Concrete Strength:	Strength of the concrete necessary for the post-tensioning operation to begin. Typically specified by the Design Professional or Post-Tensioning System Supplier.
Initial Force:	Force in the tendon immediately after transferring the prestressing force to the concrete. This occurs after the wedges have been seated in the anchor.
Initial Load:	Force in the tendon immediately after transferring the prestressing force to the concrete. This occurs after the wedges have been seated in the anchor.
Initial Prestress:	Force in the tendon immediately after transferring the prestressing force to the concrete. This occurs after the wedges have been seated in the anchor.
Initial Set:	Degree of stiffening of grout mixture less than the final set, indicating the time in hours and minutes required for the grout to stiffen sufficiently to resist, to an established degree, the penetration of a weighted test needle.
Inlet:	Opening used to inject grout into duct.
Inspection:	Examination or measurement to verify whether an item or activity conforms to specified requirements.
Installation Drawings:	Drawings furnished by the post-tensioning supplier showing information such as the number, size, length, marking, location, elongation, and profile of each tendon to be placed.
Installer:	Contracting entity responsible for unloading the post-tensioning materials, storing and protecting them on the job site at all stages of handling, storage, placement, tendon installation, stressing, and tendon finishing in accordance with the contract documents and specifications.
Intermediate Anchorage:	Anchorage located at any point along the tendon length, which can be used to stress a given length of tendon without the need to cut the tendon; normally used at concrete pour breaks.
Internal Barrier:	Barrier immediately adjacent to the main tension element that protects the main tension element from corrosion.
Jack:	Mechanical device (normally hydraulic) used for applying force to the prestressing tendon.
Jack Calibration:	Chart showing related gauge pressure to actual force applied to a tendon.

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Jack Chair:	Device to transfer the load from the jack to the concrete while allowing access to the tendon tail between the anchorage and jack. Used in trouble-shooting.
Jack Feet:	Device attached to the pistons of the jack that push against concrete and allow access to the wedge area of the anchorage. Used in trouble-shooting.
Jack Gripper Plates:	Steel plates designed to hold the jack grippers in place in the jack.
Jack Grippers:	Wedges used in the jack to hold the strand during the stressing operation.
Jacking Force:	Maximum temporary force exerted by the jack on the tendon.
Kip:	One Kip = 1000 lb. force (1 kip = 4.448 kN)
KSI:	One ksi = 1000 lbs. per square inch (1 ksi = 6.895 MPa)
Lift-Off:	Field procedure used to verify the force in a tendon.
Live-End:	End of the tendon where field stressing operations occur.
Live-End Anchorage:	Anchorage at the end of a tendon where the stressing jack is attached to the tendon during stressing operations.
Locking Cap:	Typically, a plastic cap that securely locks into the Zero Void [®] Encapsulated Anchorage when Plasma Cutting is used.
Lock-Off Load:	Prestressing force in a tendon immediately after transferring the load from the jack to the stressing anchor.
Membrane:	Polyethylene sheet that is heat-sealed to the cap to contain the pt coating.
Metal Ring:	Metal ring cast into the stressing-end of plastic encapsulated anchors to permit cutting of the strand with an oxyacetylene torch.
Mill Certificate:	Documentation from the manufacturer that contains specific product information confirming the physical properties of the material supplied.
Mill Cert:	Documentation from the manufacturer that contains specific product information confirming the physical properties of the material supplied.
Modulus of Elasticity:	Ratio of stress to corresponding strain for tensile or compressive stresses below proportional limit of material.
Monostrand:	One single-strand in a tendon.
MTE:	<u>M</u> ain <u>T</u> ension <u>E</u> lements
Multistrand:	More than one single strand in a tendon.
Multi-Use Splice Chuck:	Coupler manufactured for repeated use.
MUTS:	<u>M</u> inimum <u>U</u> ltimate <u>T</u> ensile <u>S</u> trength

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Nested Barrier:	Barrier in series with another barrier.
Non-Aggressive Environment:	All environments not specifically defined as aggressive.
Nose-piece:	The front part of the jacking device that fits into the stressing pocket, to align the jack with the anchor.
One-Time-Use Splice Chuck:	Coupler manufactured for one time use.
Outlet:	Opening to allow the escape of air, water, grout, and bleed water from the duct during grouting operations.
Owner:	The person, firm, or organization that initiated the design and construction of the project, provides or arranges for funding, is responsible for partial and final payments, and who will take possession and ownership of the project upon completion.
Oxyacetylene Torch Cutting:	Technique to cut the tails off post-tensioning tendons using a torch.
Partial Prestressing:	Prestressing of concrete to stress levels such that allowable tensile stresses exist under design service loads.
Performance Test:	Incremental, cyclic test loading of a ground anchor, wherein the total movement of the anchor at each increment including anchor load is recorded.
Permanent Anchor:	Prestressed ground anchor for permanent use, generally defined as having at least a 24-month service life.
Permeability to Chloride:	Measure of the grout's ability to resist chloride ion penetration.
Plasma Cutting:	Technique to cut the tails off of post-tensioning tendons with higher cutting speeds, narrower heat affected zone, and cleaner cuts when compared to oxyacetylene torch cutting.
Pocket Former:	Temporary device used at the stressing-end during concrete casting to provide an opening in the concrete that will allow the stressing equipment access to the anchor.
Polyvinyl Fluoride Tape (PVF):	Tape with backing made from glossy PVF film or equal.
Post-Tensioning:	Method of prestressing in which the prestressing steel is tensioned after concrete has reached a specified strength.
Post-Tensioning Installer:	Contracting entity responsible for unloading the post-tensioning materials, storing and protecting them on the job site at all stages of handling, storage, placement, tendon installation, stressing, and tendon finishing in accordance with the contract documents and specifications.

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Post-Tensioning Supplier:

Contracting entity responsible for providing all components of the post-tensioning system including the tendons, anchorages, couplers, installation drawings, and stressing equipment, and delivering them to the job site.

Potable Water:

Water as defined by EPS (Environmental Protection Agency) to meet drinking water standards.

Pressure:

Force acting per unit area.

Pressure Filtration:

The expression of water from a grout under the application of pressure through a permeable medium. In ground anchor work, this filtration is facilitated by the existence of interstices in the strand as well as the natural permeability of the surrounding ground.

Prestress:

To place a material (concrete) in a state of compression prior to the application of service loads.

Prestressed Concrete:

Structural concrete in which internal stresses are introduced to reduce potential tensile stresses in concrete resulting from applied loads. Accomplished by two methods, post-tensioned prestressing and pre-tensioned prestressing.

Prestressing Steel:

High strength steel, most commonly seven-wire strand, used to impart prestress forces to the structure. It is the element of a post-tensioning tendon that is elongated and anchored to provide the necessary design prestressing force.

Pre-Tensioning:

Method of prestressing in which prestressing steel is tensioned before the concrete has been placed.

Primary Grout:

Grout or polyester resin that is injected into the ground anchor drill hole prior to or after the installation of the ground anchor tendon to allow the tendon to transfer load to the surrounding ground along the bond length of the tendon.

Profile:

The vertical deviation (path) a tendon follows from end to end.

Proof Test:

Incremental loading of a ground anchor wherein the total movement of a ground anchor at each increment is recorded.

PT Coating:

Material used to protect against corrosion and reduce friction between prestressing steel and sheathing (commonly called grease).

Pulling Head:

Temporary anchoring device behind the hydraulic jack used to hold the tendon during testing and stressing.

Pull Seating:

Method of seating wedges at fixed-end anchorages that requires stripping sheathing in back of the anchor to permit the stressing jack to pull the wedges and strand into the anchor cavity.

Pump:

Hydraulic pump used to provide hydraulic pressure through hoses to the stressing jack.

Push Seating:

Method of seating wedges at fixed-end anchorages by pushing the strand and wedges into the anchor cavity. No stripping of the sheathing in back of the anchor is necessary.

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- Quality Assurance:** All the planned and systematic activities implemented on the project that can be demonstrated to provide confidence that a product or service will fulfill requirements for quality.
- Quality Control:** The operational techniques and activities used to fulfill requirements for quality.
- Quick Coupler:** Hand-tightened fitting with ball checks used to attach gauge and hydraulic hoses to the pump and jack.
- Ram:** Mechanical device (normally hydraulic) used for applying force to the prestressing tendon.
- Ram Calibration:** Chart showing related gauge pressure to actual force applied to a tendon.
- Ram Gripper Plates:** Steel plates designed to hold the ram grippers in place in the jack.
- Ram Grippers:** Wedges used in the ram to hold the strand during the stressing operation.
- Reference Point:** Painted mark placed on a tendon tail used to measure the elongation of a tendon after stressing.
- Relaxation:** Decrease of stress or load with time while the tendon is held under constant strain.
- Repair Anchor:** Special anchor used for structural modification or repair of existing tendons. The anchor consists of a removable segment which allows it to slide onto an existing strand. The segment is then returned and tightened by screw or bolt.
- Residual Movement:** Non-elastic (non-recoverable) movement of a ground anchor measured during load testing at return to the Alignment Load.
- Resin Cartridge:** Package containing resin with filler material and a separated catalyst (hardener).
- Restressable Anchor Head:** Anchor head that permits the anchor load, throughout the life of the structure, to be measured by lift-off and adjusted.
- Rock Anchor:** System used to transfer tensile loads to the ground (soil or rock), which includes the prestressing steel, anchorage, corrosion protection, bond breaker, spacers, centralizers, and grout.
- Saddle:** Structural device that allows both deviation of the main tendon and transfer of force into the structure without breaking the continuity of the tendon.
- Safety Factor:** Ratio of ultimate capacity to working load used for the design of any component or interface.
- Seal:** Plastic (rubber) device used to close the ends of sleeves (tubes) to connect them to the sheathing.
- Seating-Loss:** Relative movement of the wedges into the anchor cavity during the transfer of the prestressing force to the anchorage resulting in some loss of prestressing force.
- Secondary Grout:** Grout that is injected into a ground anchor drill hole within the free stressing length of the tendon for corrosion protection or load transfer.

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Set Time:	Lapsed time from the addition of mixing water to a cementitious mixture until the mixture reaches a specified degree of rigidity as measured by a specific procedure.
Setting:	Process, due to chemical reactions, occurring after the addition of mixing water that results in a gradual development of rigidity of a cementitious mixture.
Sheathed Strand:	Strand coated with pt coating and covered by an extruded polyethylene or polypropylene sheathing.
Sheath:	Smooth or corrugated pipe or tube protecting the prestressing steel against corrosion.
Sheathing:	Material encasing prestressing steel to prevent bonding of the prestressing steel with the surrounding concrete, provide corrosion protection, and contain the pt coating or grout.
Sheathing Stripper:	Device to remove the sheathing within the wedge cavity after the concrete has been placed.
Shipping List:	Detailed list of specific materials included in a particular shipment of material.
Shop Drawings:	Drawings furnished by the post-tensioning supplier showing information such as the number, size, length, marking, location, elongation, and profile of each tendon to be placed.
Slab Bolster:	Continuous hardware used to support or hold post-tensioning tendons and reinforcing bars in their proper position to prevent displacement before and during concrete placement.
Sleeve:	Plastic tube that provides a connection between certain encapsulated anchors and the sheathing. The sleeve normally contains air voids that must be filled with pt coating.
Slotted Bearing Plate:	A metal bearing plate of sufficient size and thickness, slotted to fit over the tendon, used to transfer the stressing force to the surface of the concrete. Primarily used with back stressing and trouble shooting anchors.
Slurry:	Cementitious paste mixed with aggregate fines when making ready-mix concrete.
Socket:	Mechanical device comprising all components and materials required to retain the force in a stressed stay cable and to transmit this force to the bridge superstructure or tower.
Soil Anchor:	System used to transfer tensile loads to the ground (soil or rock), which includes the prestressing steel, anchorage, corrosion protection, bond breaker, spacers, centralizers, and grout.
Spacer:	Device to separate elements of a multiple-element tendon to ensure full bond development of each prestressing steel element.
Special Inspector:	Individual certified by the International Code Council (ICC) to conduct special inspections of prestressed concrete.
Splice Chuck:	Device designed to connect ends of two strand ends together, thereby creating a continuous tendon by transferring the prestressing force from one strand to the next.

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- Split Donut:** Special anchor used for structural modification or repair of existing tendons. The anchor consists of a removable segment which allows it to slide onto an existing strand. The segment is then returned and tightened by screw or bolt
- Split Grommet:** Temporary two-piece device used at the intermediate-ends during concrete casting to provide an opening in the concrete that will allow the stressing equipment access to the anchor.
- Split Pocket Former:** Temporary two-piece device used at the intermediate-ends during concrete casting to provide an opening in the concrete that will allow the stressing equipment access to the anchor.
- Split Seal:** One-piece split plastic (rubber) device used at intermediate anchorages to close the ends of sleeves (tubes) to connect them to the sheathing.
- Spring-Loaded Fixed-End Anchorage:** Encapsulated anchorage assembly provided with wedges, spring, and transparent cap filled with pt coating. The spring applies pressure to the wedges to attach the anchorage to the strand. The wedges are held in place by the spring and locking cap.
- Stage Stressing:** Sequential stressing of tendons in separate steps or stages in lieu of stressing all the tendons during the same stressing operation.
- Stay Cable:** Complete cable system including anchorages, main tension elements, sheathing and all corrosion protection materials and devices.
- Stay Pipe:** External covering of the assembled stay cable, comprised of either high density polyethylene pipe or metal pipe, or other materials and shapes to provide part of the corrosion protective system, and/or to control temperature variation and/or rain-wind induced vibrations.
- Strand:** High-strength steel wires helically twisted around a center wire. In post-tensioning applications typically a seven-wire strand.
- Strand Slippage:** When the wedges fail to hold the prestressing strand after the prestressing force is applied to a tendon.
- Strength:** A body or object's capacity to exert or resist force.
- Stresses:** Internal forces acting on adjacent parts of a body, measured per unit area.
- Stressing-End:** End of the tendon where field stressing operations occur.
- Stressing-End Anchorage:** Anchorage at the end of a tendon where the stressing jack is attached to the tendon during stressing operations.
- Stressing Equipment:** Consists normally of a jack, pump, hoses, and a pressure gauge.
- Stressing Force:** Maximum temporary force exerted by the jack on the tendon.
- Stressing Pocket:** Void created by the pocket former between the stressing anchor and the edge of the concrete to allow access for the stressing equipment. After stressing, this void is filled in with an approved grout to provide protection for the tendon end.

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Stressing Record:	Permanent record of the actual tendon elongations after stressing and the actual pressure gauge readings used to stress a particular tendon typically produced by the inspector.
Stressing Tail:	The excess strand protruding from the stressing-end anchorage.
Subcontractor:	Person, firm, or organization engaged by the Contractor to provide selected construction activities, materials, or other specialized construction or engineering services.
Supplier:	Contracting entity responsible for providing all components of the post-tensioning system including the tendons, anchorages, couplers, installation drawings, and stressing equipment, and delivering them to the job site.
Tail:	The excess strand protruding from the stressing-end anchorage.
Temporary Anchor:	Prestressed ground anchor for temporary use, generally defined as having a service life less than 24 months.
Temperature Tendons:	Tendons used to resist shrinkage and temperature stresses and usually placed parallel to the beam, wall, etc.
Tendon:	In post-tensioning applications, the tendon is a complete assembly consisting of anchorages, prestressing steel, and sheathing with pt coating for unbonded applications and ducts with grout for bonded applications.
Tendon Bond Length:	Length of the prestressing steel that is bonded to the grout.
Tendon Bundle:	Bundle of individual coiled tendons banded together.
Tendon Coil:	Individual tendon coiled and wired together.
Tendon Group:	More than one prestressing strand tied together to form a tendon.
Tendon Profile:	The vertical deviation (path) a tendon follows from end to end.
Tendon Support System:	Required support bars, chairs, bolsters, and other accessories required to maintain the tendon profile.
Tendon Tail:	The excess strand protruding from the stressing-end anchorage.
Tensile Stresses:	Internal forces directed away from the part of a body on which they act.
Tension:	The effect of tensile stresses on a body that tend to pull the body apart.
Tension Ring:	Device to confine the prestressing steel from tearing the concrete where the individual tendon elements transition from the duct into the anchorage.
Testing:	Element of verification for the determination of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.

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Test Load:	Maximum load to which the ground anchor is subjected during testing.
Thixotropic:	Property of a material that enables it to stiffen in a short time while at rest, but to acquire a lower viscosity when mechanically agitated. The process is reversible.
Threshold Inspector:	This is a term employed by certain states to define a qualified professional engineer who inspects structures of certain defined parameters, and who also inspects the post-tensioning tendons.
Traceability:	Ability to trace the history, application, or location of an item and like items or activities by means of recorded identification.
Transition Length:	Length of the tendon where individual tendons are deviated from their grouping into the anchorage.
Transition Tube:	(Ground Anchors) Common sheath that is inserted into the top of the fluid grout and sealed to the trumpet.
Troubleshooting Anchor:	Special anchor used for structural modification or repair of existing tendons. The anchor consists of a removable segment which allows it to slide onto an existing strand. The segment is then returned and tightened by screw or bolt.
Trumpet:	Device to allow corrosion protection in the transition length from the anchorage to the duct.
Tube:	Plastic tube that provides a connection between certain encapsulated anchors and the sheathing. The sleeve normally contains air voids that must be filled with pt coating.
Ultimate Strength:	Tension force or stress that is required to fail a steel element in tension.
Unbonded Anchor:	Ground anchor in which the free stressing length remains permanently unbonded to the surrounding ground or structure.
Unbonded Tendon:	Tendon in which the prestressing steel is prevented from bonding to the concrete and is free to move relative to the concrete. The prestressing force is permanently transferred to the concrete at the tendon ends by the anchorages only.
Uniform Tendons:	Single or group of tendons in a slab that are uniformly distributed, usually perpendicular to the banded tendons, beams, or walls.
Vent:	Opening to allow the escape of air, water, grout, and bleed water from the duct during grouting operations.
Volume Change:	Change in volume produced by continued hydration of cement, excluding effects of the applied load and change in thermal or moisture content.
Water-Reducing Agent:	Admixture that either increases the slump of freshly mixed grout without increasing the water content or maintains the slump with reduced amount of water due to factors other than air entrainment.
Wedges:	Pieces of tapered metal with serrations, which bite into the prestressing steel (strand) during transfer of the prestressing force.

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- Wedge Plate:** Hardware that holds the wedges of a Multistrand tendon and transfers the tendon force to the bearing plate.
- Wedge-Set:** The relative movement of the wedges into the anchor cavity during the transfer of the prestressing force to the anchorage resulting in some loss of prestressing force.
- Wobble Friction:** The friction caused by the unintended deviation of the tendon.
- Yield Strength:** Point at which steel is stressed beyond the point of its elasticity and the steel will not return to its original properties.
- Zero Void®:** GTI encapsulation system that does not require injecting grease into sleeves of an encapsulation system.
- Zero Void Seal®:** Soft plastic device with tabs that mechanically attaches to the Zero Void Encapsulation® and provides a “void-free” seal of the anchorage to the sheathing.

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