

Quality Matters
Over Quantity



POST-TENSIONING SYSTEMS



"We operate with industry-approved procedures, certified materials and standardized PT services ensuring long-term structural reliability and performance."

COMPANY HISTORY

Established on the core principle that “Quality Matters Over Quantity,” Unified Post-Tensioning Systems LLP entered the industry in 2018 with a clear recognition: India’s rapidly growing construction sector needed more efficient, technically governed, and performance-driven structural systems.

At a time when many projects were struggling with heavier slabs, rising material costs, slow construction cycles, and inconsistent execution standards, the role of post-tensioning was becoming increasingly critical. The market needed PT but it needed PT delivered with engineering discipline, not shortcuts.

Unified was founded to close that gap.

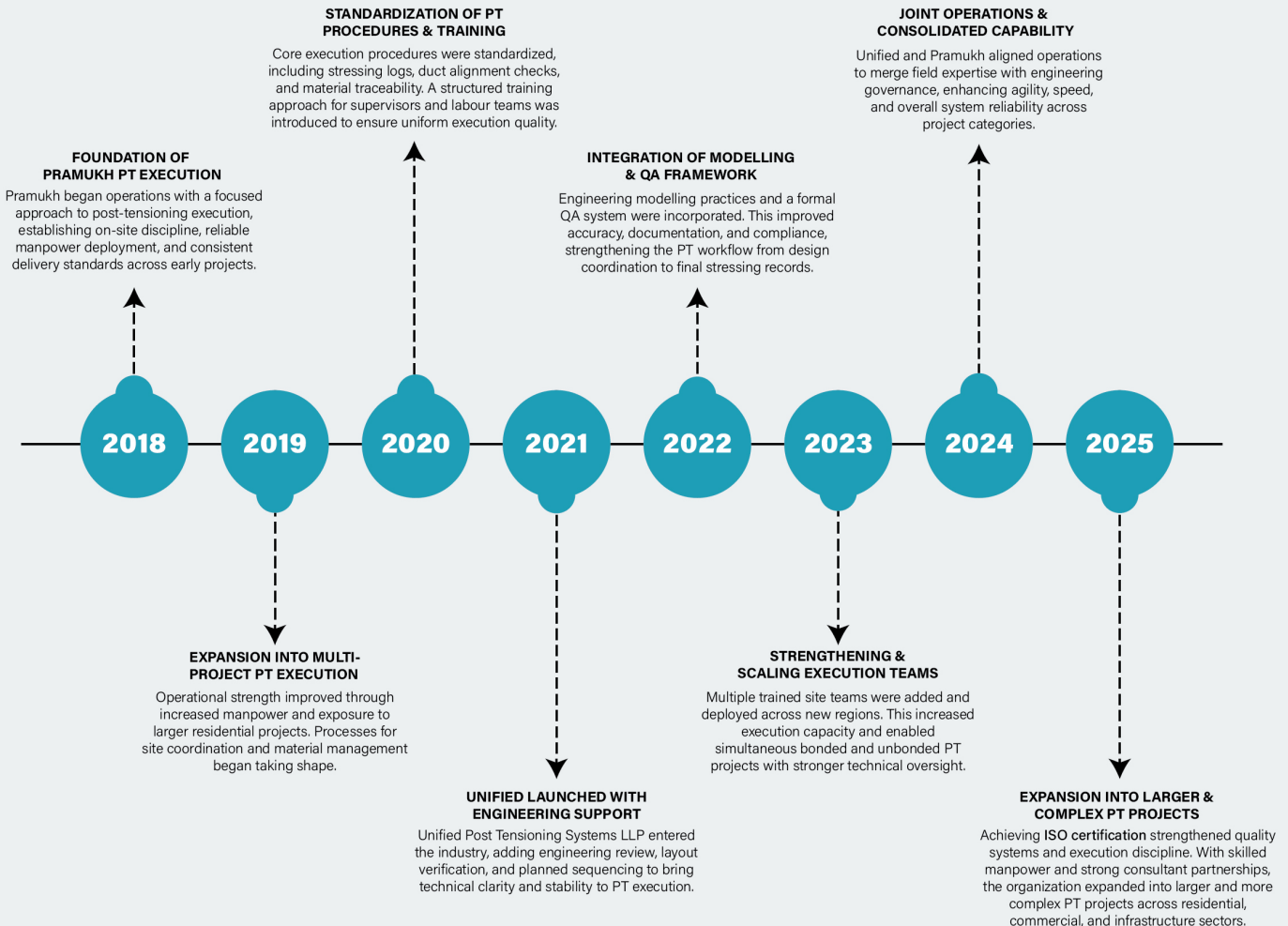
From the beginning, the company focused on premium bonded and unbonded post-tensioning systems, backed by structured planning, material traceability, trained execution teams, and strict compliance with engineering requirements. Instead of treating PT as just another activity at site, Unified embedded a process-driven approach:

- ▶ understanding structural intent
- ▶ controlling PT layout and sequencing
- ▶ executing with precision
- ▶ and ensuring each stressing operation met documented standards.

As demand for long spans, slender slabs, faster cycles, and cost optimization accelerated in India, the importance of dependable PT systems grew. Unified responded by expanding its capabilities more teams, stronger QA/QC processes, improved material systems, and deeper collaboration with structural consultants and developers.

Today, Unified stands as a trusted PT partner across multiple regions, delivering systems that align with modern engineering needs and the evolving expectations of India’s construction industry.

GROWTH MILESTONES



01

Top-notch Quality

Being in the construction industry we know the significance of quality and never compromise with it. We maintain rigorous quality standards for all our work.

02

Expert Team

Our team consists of the most skilled and experienced engineers and professionals in the industry which ensures impeccable work.

03

On-time Project Completion

We strongly believe that time, above all else, is our most valuable and finite resource. We always complete the project on time, avoiding any delays or hassles for our customers.

04

Customer Support

We pride ourselves for prompt, thoughtful and effective customer support that we always offer to our customers.

WHY US?





VISION

To become the most preferred choice of real estate developers, structural consultants and architects of India and assist them in creating robust infrastructure for our modern India.



MISSION

To constantly deliver excellent value-based, innovative solutions that are sure to elevate the benchmarks of quality in construction and exceed the expectations of our customers.

INNOVATION

We constantly strive to be more creative in our thinking and more efficient in our performance. Our determination to be the best in business by offering world-class products and services to customers.

INTEGRITY

We are recognized and respected across the industry for our utmost commitment to honesty and transparency.

TEAMWORK

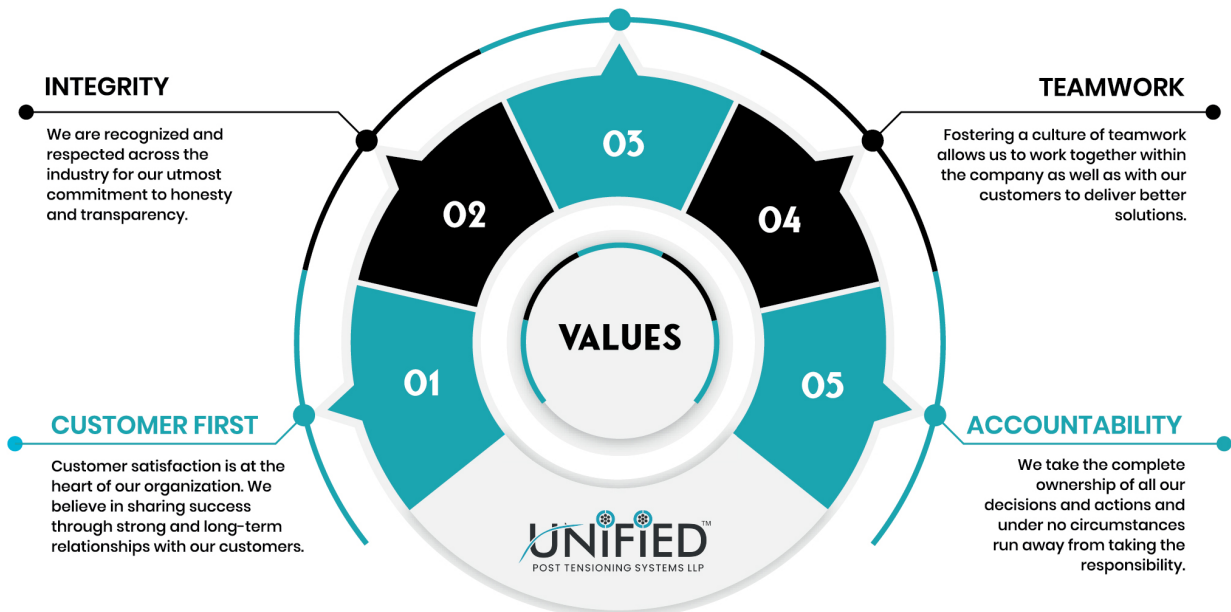
Fostering a culture of teamwork allows us to work together within the company as well as with our customers to deliver better solutions.

CUSTOMER FIRST

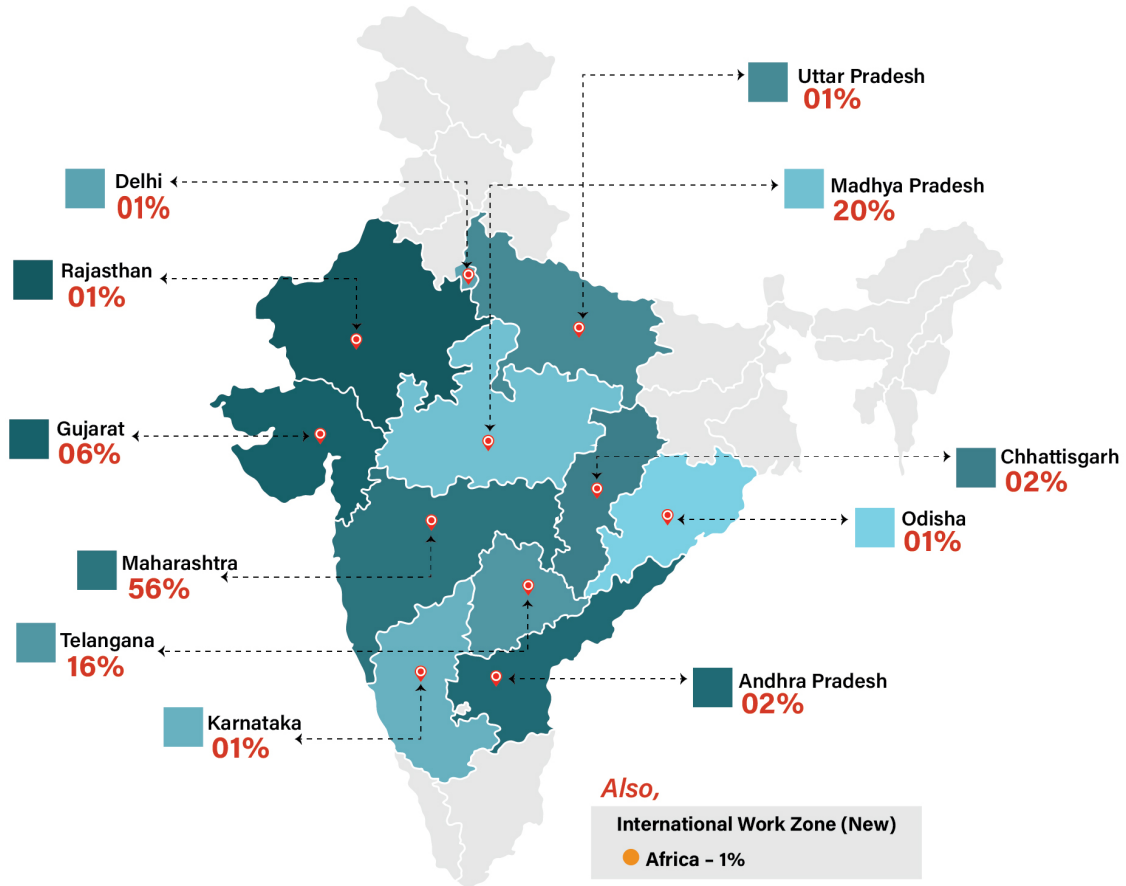
Customer satisfaction is at the heart of our organization. We believe in sharing success through strong and long-term relationships with our customers.

ACCOUNTABILITY

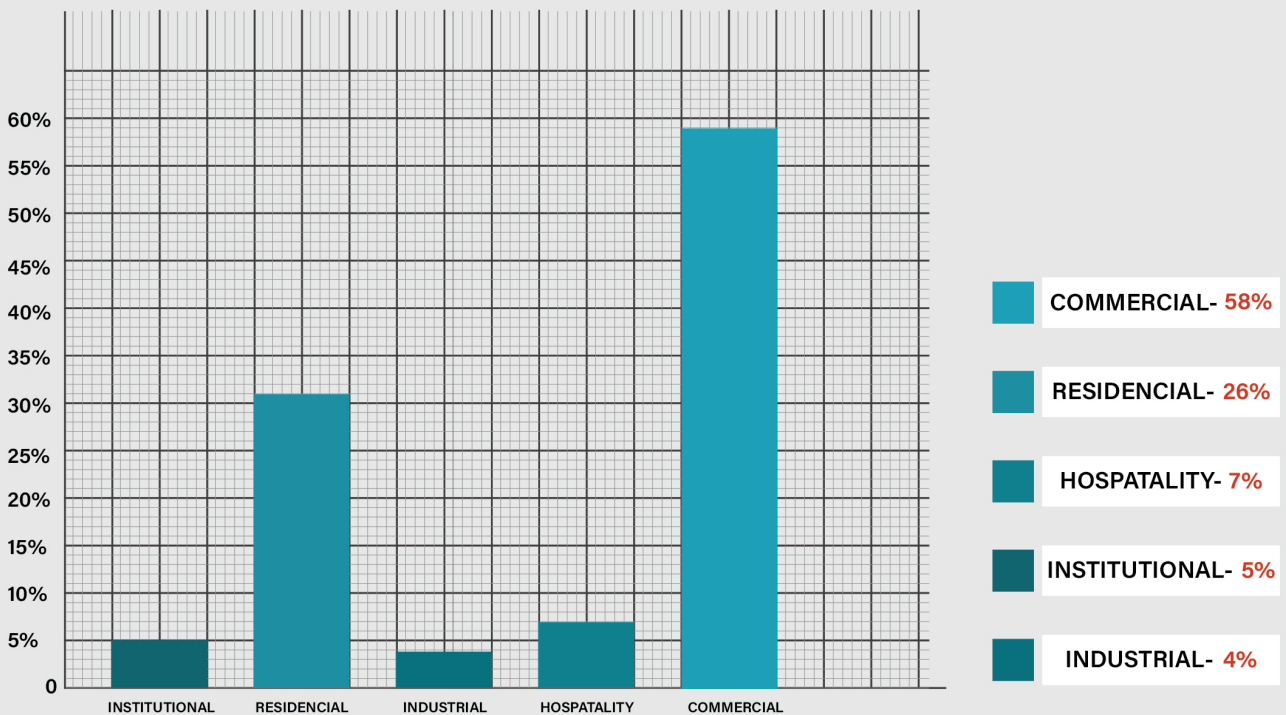
We take the complete ownership of all our decisions and actions and under no circumstances run away from taking the responsibility.



WORK ZONE



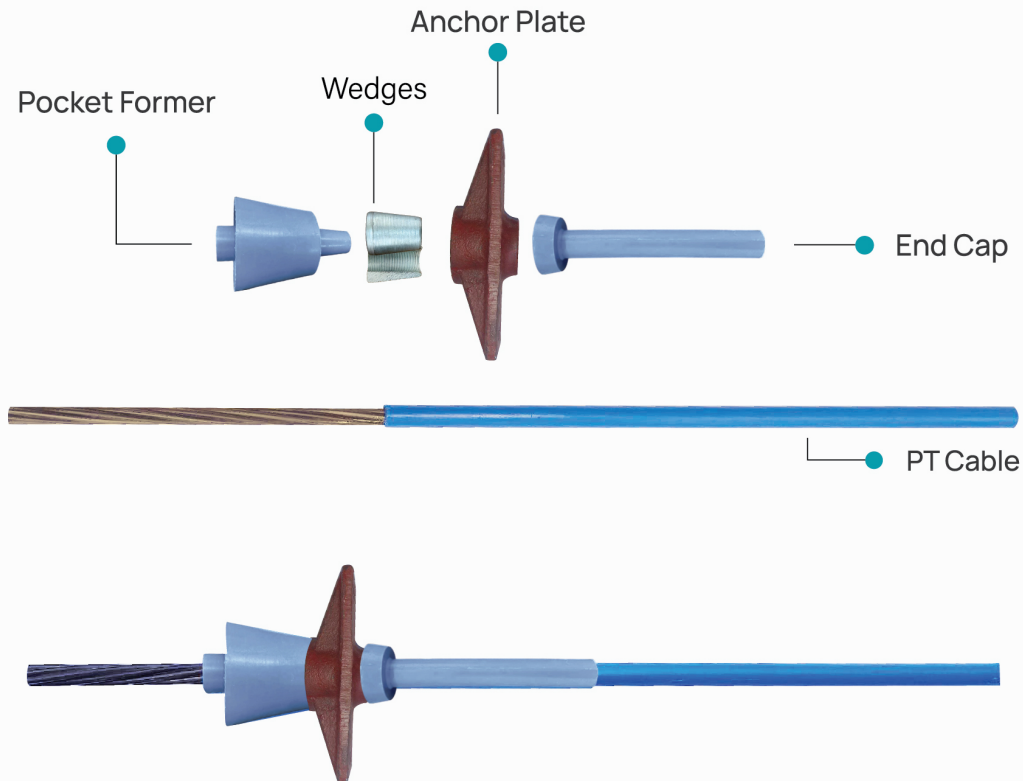
CATEGORY OF PROJECT



MONO-STRAND UNBONDED PT SYSTEM



COMPONENTS OF UNBONDED PT SYSTEM



MATERIAL SPECIFICATIONS OF UNBONDED PT SYSTEM

PRE-STRESSING STEEL

- Low Relaxation 7 wire Strand of Class II (Grade 1860) with 12.9 mm nominal diameter used in mono-strand unbonded post tensioning tendons shall conform to the requirements of IS 14268:2022

Net sectional Area of Strand: 100 mm²

- Yield Load: Not less than 180 kN
- Ultimate Strength. Not less than 1860 N/mm²
Minimum Breaking Load Not less than 186kN
- Modulus of Elasticity. At least 195,000N/mm²
- Minimum Elongation: 3.5% for a gauge length of 600 mm
- Relaxation at 1000 hours Less than 2.5% at 70% Minimum Ultimate Tensile Strength
- Weight of PE coated strand 0.887 kg/m

GREASE COATING SPECIFICATIONS

- ☉ Grease coating shall provide protection against corrosion to the prestressing steel
- ☉ It shall provide lubrication between the prestressing steel & sheathing
- ☉ It should resist flow within anticipated temperature range of exposure
- ☉ It should provide continuous non brittle coating at lowest anticipated temperature of exposure
- ☉ It should be chemically stable and non-reactive with prestressing steel, reinforcing steel, sheathing material and concrete
- ☉ It shall possess appropriate moisture displacing and corrosion inhibiting properties
- ☉ Minimum weight of the grease coating on the Pre stressing strand shall not be less than 1.14kg per 30.5m for 12.9 mm diameter PT cable
- ☉ The coating material shall completely fill the annular space between the strand and sheathing & shall extend over the entire length of the PT cable

SHEATHING SPECIFICATIONS

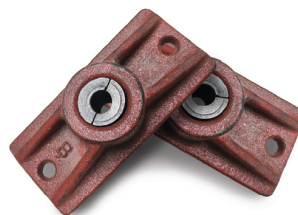
- ☉ Sheathing Material: polypropylene
- ☉ Minimum Density: 0.941 grams/cm³
- ☉ Thickness: more than 1.25 mm
- ☉ Appearance: Sheathing shall provide a smooth circular outside surface and shall not visibly reveal lay of the strand
- ☉ Coverage: Sheathing shall be continuous over the entire length to be unbonded and shall prevent intrusion of cement paste or loss of grease

ANCHOR PLATE

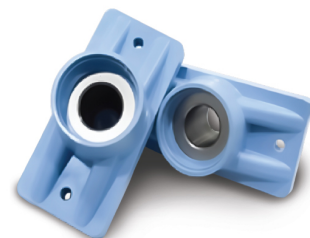
- ☉ Material Grade: ASTM A536 Grade 80-55-06 or IS 1865 Grade SG 500/7 or 550/6
- ☉ Casting shall be non-porous and free of sand, blow holes, voids, and other defects

MICROSTRUCTURE

- ☉ Graphite Type (AS PER ASTM A247 PLATE I & III)
 - I. Form I & II (Spheroid or Nodular type)
 - II. Distribution A (Uniform Distribution)
 - III. Size: 6-8
- OR
- ☉ Graphite Type (ISO/R 945)
 - I. Form VI (Spheroid or Nodular type)
 - II. Distribution A (Uniform Distribution)
 - III. Size 6-8
- ☉ Nodularity : 90-95%
- ☉ Carbide : Less than 3%
- ☉ Pearlite 35-40%
- ☉ Hardness Number Range (BHN) : 170-260



Standard Anchor Plate



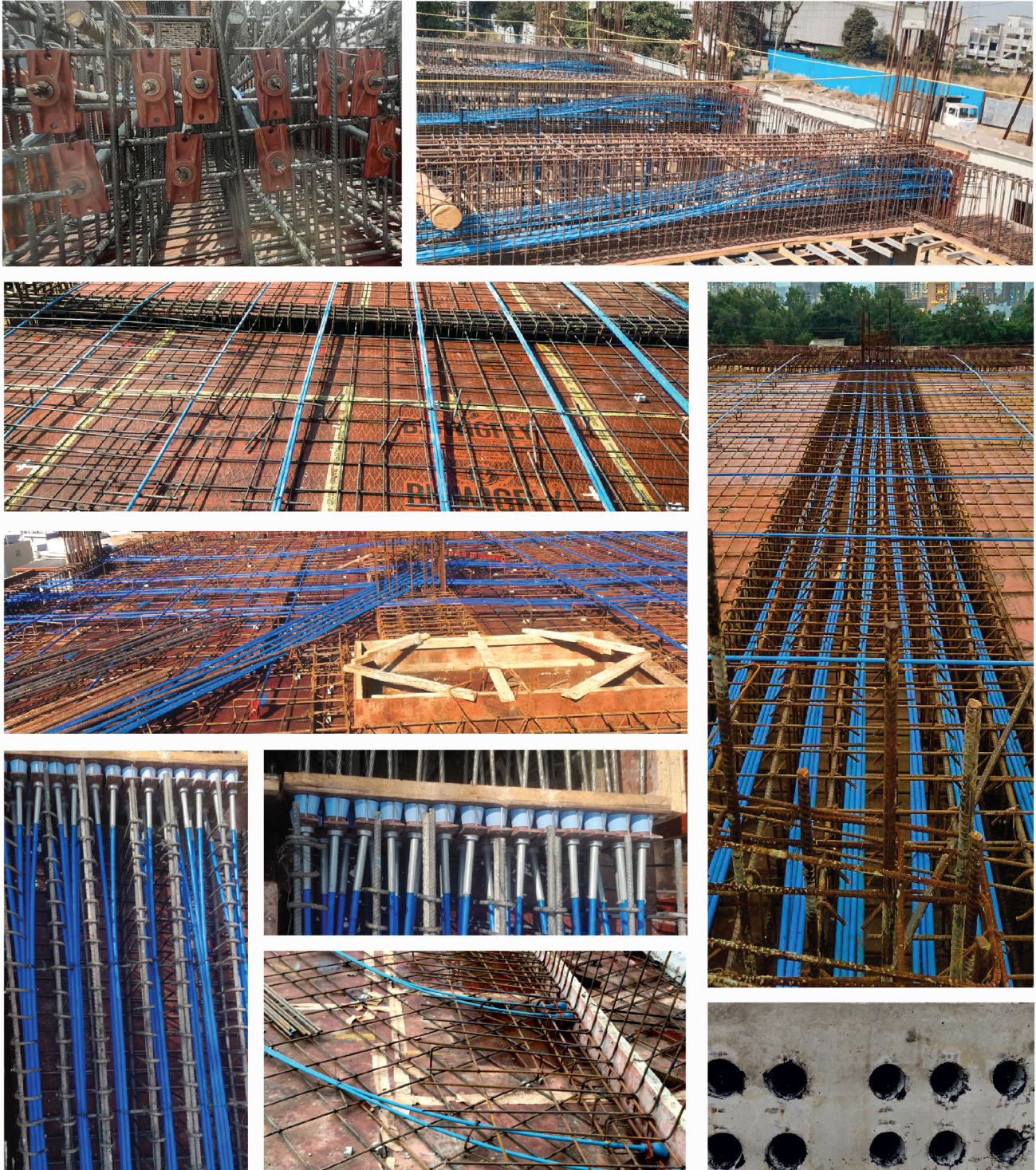
Encapsulated Anchor Plate

WEDGES

- ☉ Material Grade : IS : 9175 (Part 20)-1986 Grade 20MnCr5 or 20CrMnTiH or ENIA or I2L14
- ☉ Hardness value range :
At Surface : 50-65 HRC



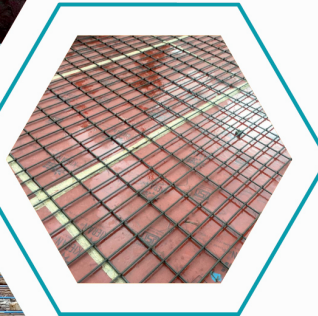
PROJECT VISUALS OF UNBONDED PT SYSTEM



EXECUTION PROCESS OF UNBONDED PT SYSTEM



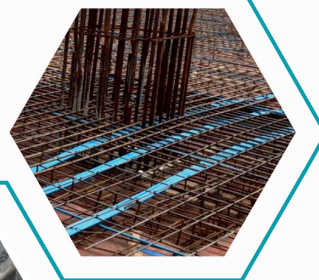
STEP 01
Material Cutting & Dispatch



STEP 02
Shuttering & Bar Binding



STEP 03
Installation after
completion of
shuttering & Bottom
steel placement



STEP 04
Top Steel Placement



STEP 05
Concreting
Process

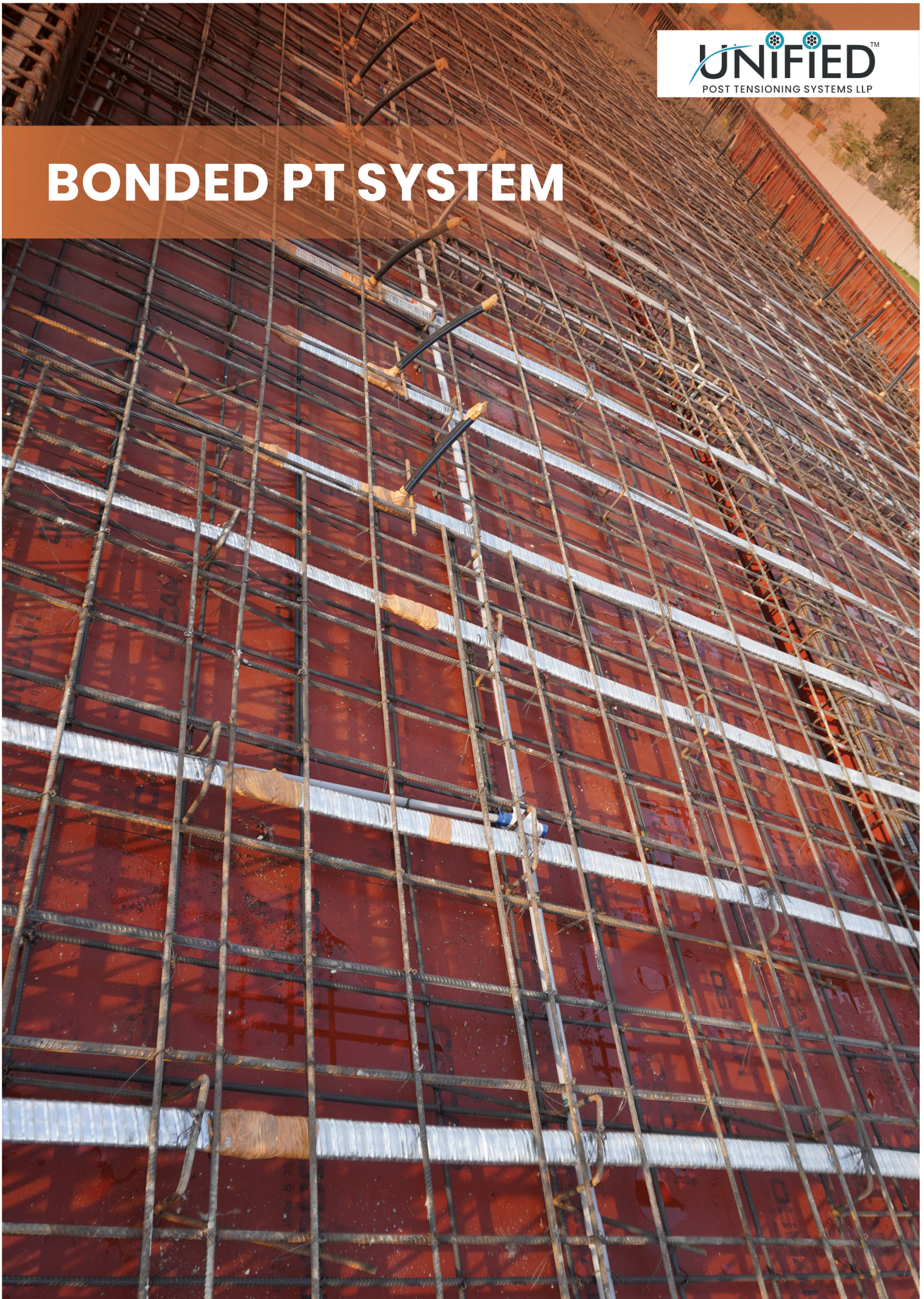


STEP 06
Stressing Activity



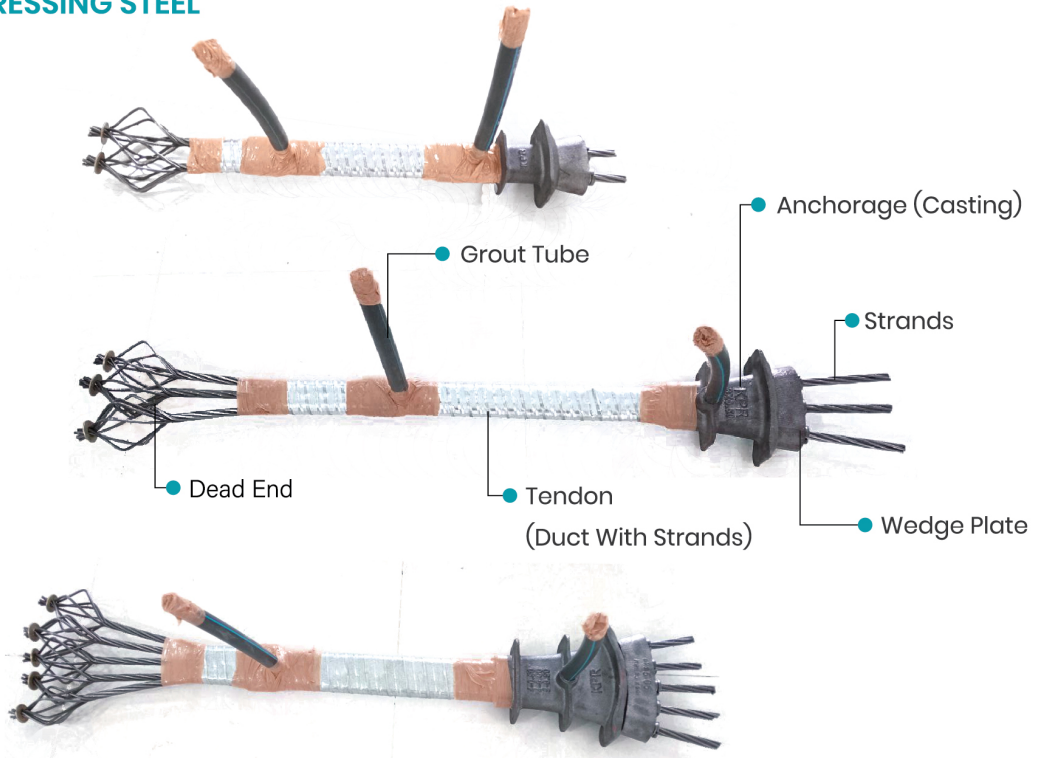
STEP 07
Cutting of
Gripping Length

BONDED PT SYSTEM



COMPONENTS OF BONDED PT SYSTEM

PRE-STRESSING STEEL



ANCHORAGES



WEDGES



MATERIAL SPECIFICATIONS OF BONDED PT SYSTEM

PRE-STRESSING STEEL

- Low-Relaxation 7 wire Strand of Class II (Grade 1860 as per ASTM A416-2010) with 12.9/15.2 mm nominal diameter used in Bonded post tensioning tendons shall conform to the requirements of IS 14268:2022
- Sectional steel area of Strand: 100/140mm²
Yield Load: Not less than 164/228kN
- Ultimate Strength: Not less than 1860N/mm²
- Minimum Breaking Strength: Not less than 186/259kN
- Modulus of Elasticity: At least 195,000N/mm²
- Relaxation at 1000 hours: Less than 2.5% at 70% Minimum Ultimate Tensile Strength
- Weight of Bare Strand: More than 0.781/1.1 kg/m

ANCHOR BLOCK

- Tensile strength : > 550 N/mm²
- Yield Strength : 340-350 N/mm²
- Nodularity : > 90%
- Hardness : 197-219 BHN

WEDGES

- Material Grade: 20MnCr5
- Hardness value range :
- At Surface : 56-65 HRC

DUCT

- Material : Galvanized strip of steel
- Thickness : 0.25 - 0.4 mm
- Width : 30 - 80 mm
- Shape : Flat / Round
- Apperance : Corrugated

PROJECT VISUALS OF BONDED PT SYSTEM

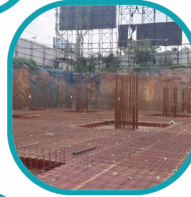


EXECUTION PROCESS OF BONDED PT SYSTEM

STEP 01
Material Cutting & Dispatch



STEP 02
Shuttering & Bar Binding



STEP 03
Installation after completion of Shuttering & Bottom Steel placement



STEP 04
Top Steel Placement



STEP 05
Concreting Process



STEP 06
Stressing Activity



STEP 07
Cutting Of Gripping Length



STEP 08
Patching of Recess pocket



STEP 09
Grouting of PT Tendon



DESIGN CLAUSES FOR POST-TENSIONED ELEMENTS

Level of Pre-stressing as per ACI 318M-14 (Clause 24.5.2.1)

For Two-Way Flat Slab (Serviceability Design Requirement):

Class U: Tensile stresses limit at the mid-span bottom fiber zone of slab section; less or equal to 0.5 square root of equivalent cylindrical strength value of concrete grade.

For One-Way Slab & Beams (Serviceability Design Requirement):

Class T; for Normal Loading Criteria

Class C; for heavy loads like Girder Beam with Floating columns as well as Members need to design for Fire Tender Loading.

Level of Pre-stressing as per IS 1343:2012 (Clause 24.2.1)

For Two-Way Flat Slab (Serviceability Design Requirement):

Type-2: Tensile stresses limit at the mid-span bottom fiber zone of slab section: below 3 N/MM².

For One-Way Slab & Beams (Serviceability Design Requirement):

Type-2; for Normal Loading Criteria

Type-3; for heavy loads like Girder Beam with Floating columns as well as Members need to design for Fire Tender Loading.

Additional non-prestressed reinforcement provided as per criteria of ACI 318M-14; clause 8.6 for minimum non-prestressed reinforcement and clause 20.3 for the required non-prestressed reinforcement to achieve required flexural strength at ultimate load combination case.

Reinforcement requirement for temperature and shrinkage effects shall be as per IS1343: 2012 clause 19.6.3.3 i.e., 0.15% of total cross-sectional area of the concrete section.

Permissible deflection values (Long-term with shrinkage effect considering creep coefficient) as per IS 1343:2012 clause 23.3.1 a, b, c.

Final Downward deflection due to Self-weight + Live Load + S.D.L. + PT + Effect of Shrinkage and Creep (Corresponding to Self-weight + S.D.L. + PT) should not be more than span/250 (IS 1343: 2012 clause 23.3.1.a)

Downward deflection (occurring after erection of partitions and the application of finishes) due to shrinkage and creep (Corresponding to Self-weight+ S.D.L. + PT) and Live load should not be more than span/350 or 20mm whichever is less (IS 1343:2012 clause 23.3.1.b)

Total upward deflection should not exceed span/300 (IS 1343:2012 clause 23.3.1.c)

Anchorage of PT Cable shall be placed such that the centroid of all anchorage should fall under the 2/3 depth of the member from the bottom.

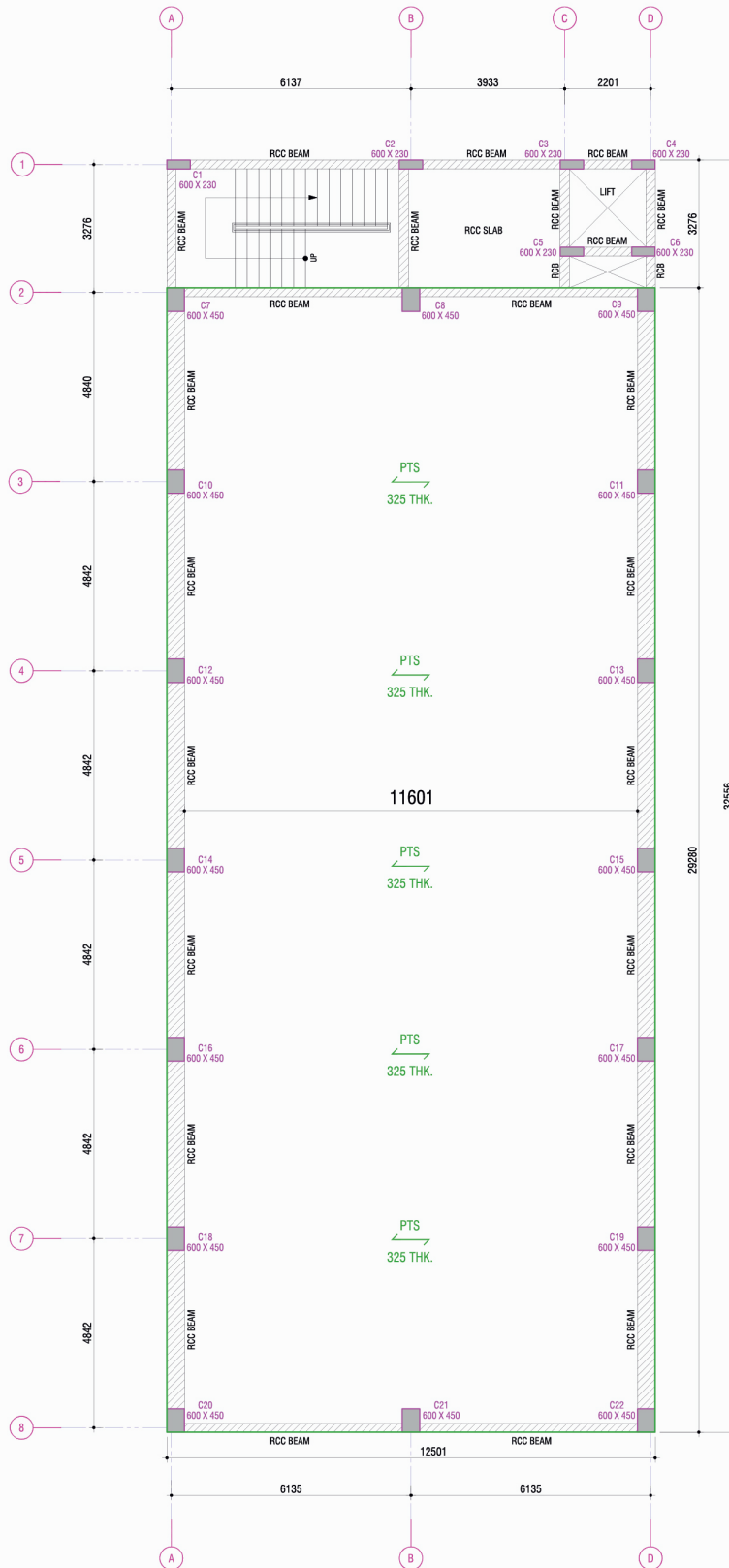
The minimum CGS height of tendon at the mid-span shall not be less than 45 mm in case of slab and 65 mm in case of beam from the bottom of member.

Minimum clear cover to the reinforcement shall be 25 mm in case of slab and 40 mm in case of beam.

DESIGN INPUTS FOR POST-TENSIONED ELEMENTS

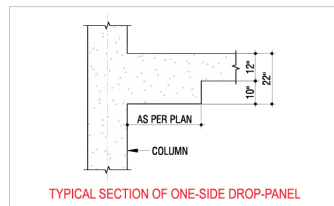
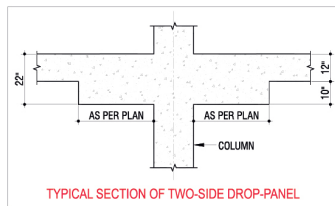
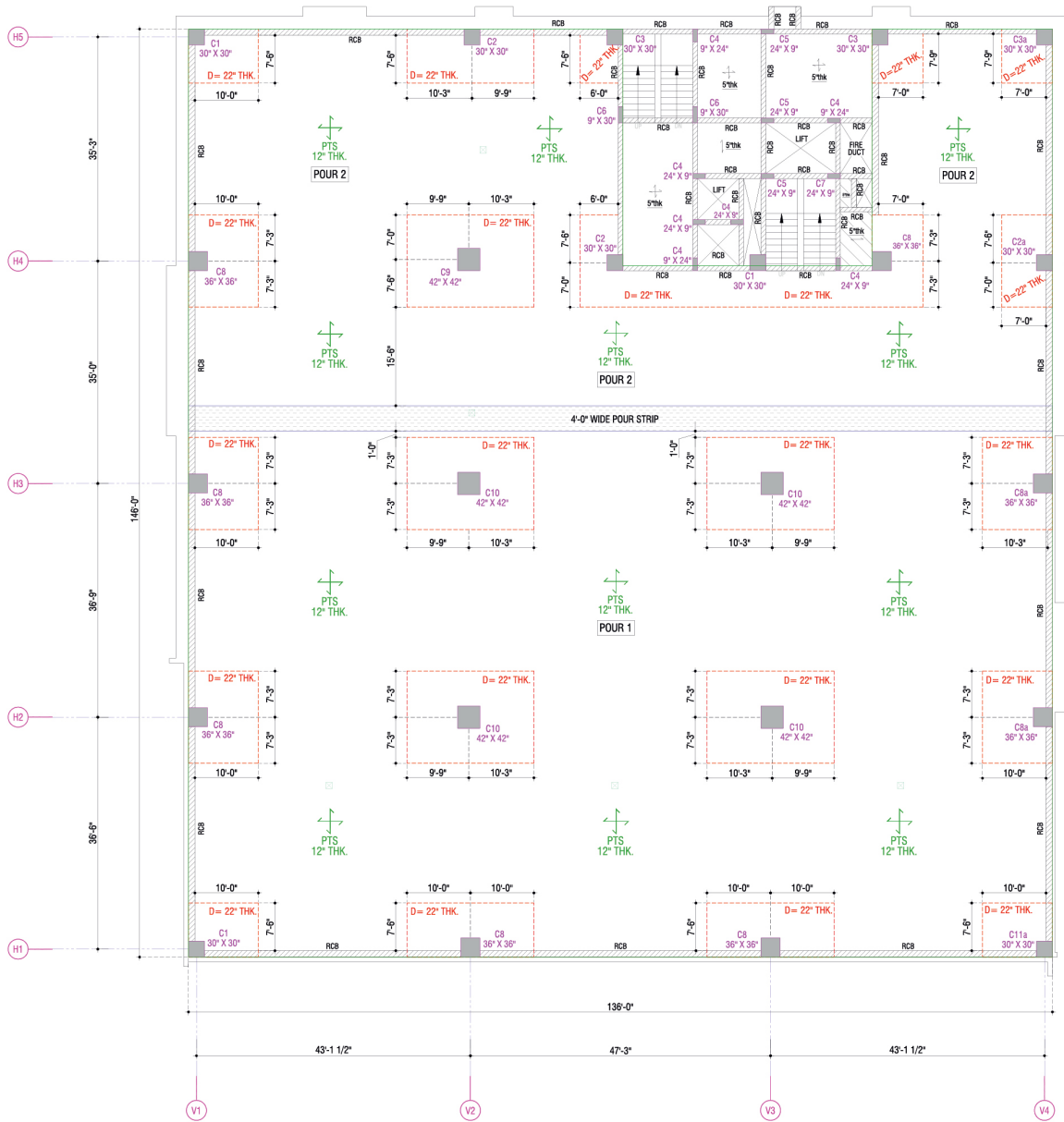
- Live Load (LL): kN/m² (as per recommendation received from the Structural Consultant)
- Wall Load: in kN/m² (as per Architectural/Structural Consultant detail)
- Floor Finish (FF): kN/m² (as per recommendation received from the Structural Consultant)
- Service Duct & False Ceiling Load: in kN/m² (as per Structural Consultant detail)
- Self-weight of the members as per the section size
- Minimum Grade of Concrete M35 (Cube strength)
- Grade of Steel: fe415 or fe500 or higher

FLAT PLATE



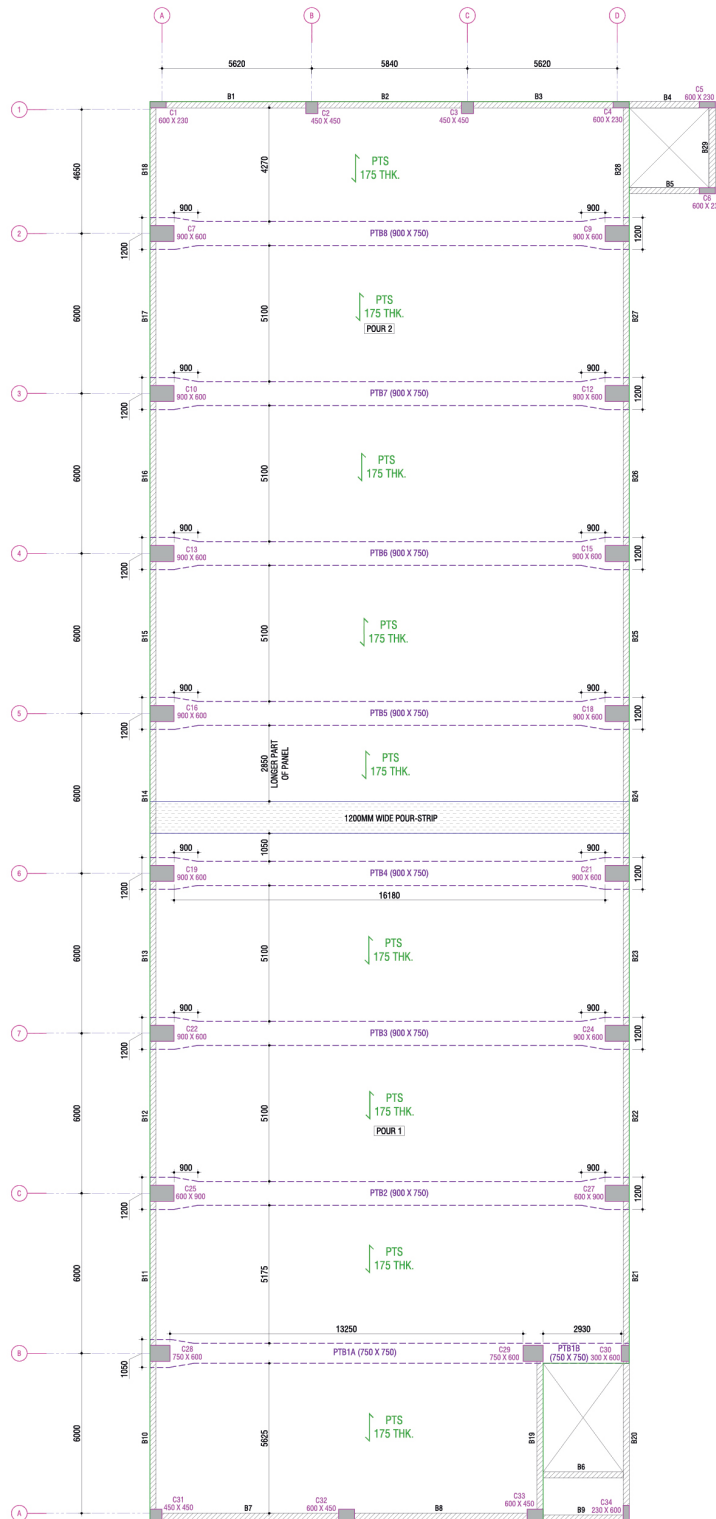
LIVE LOAD:	5.0 KN/M ²
FLOOR FINISH:	2.0 KN/M ²

FLAT SLAB WITH DROP CAP



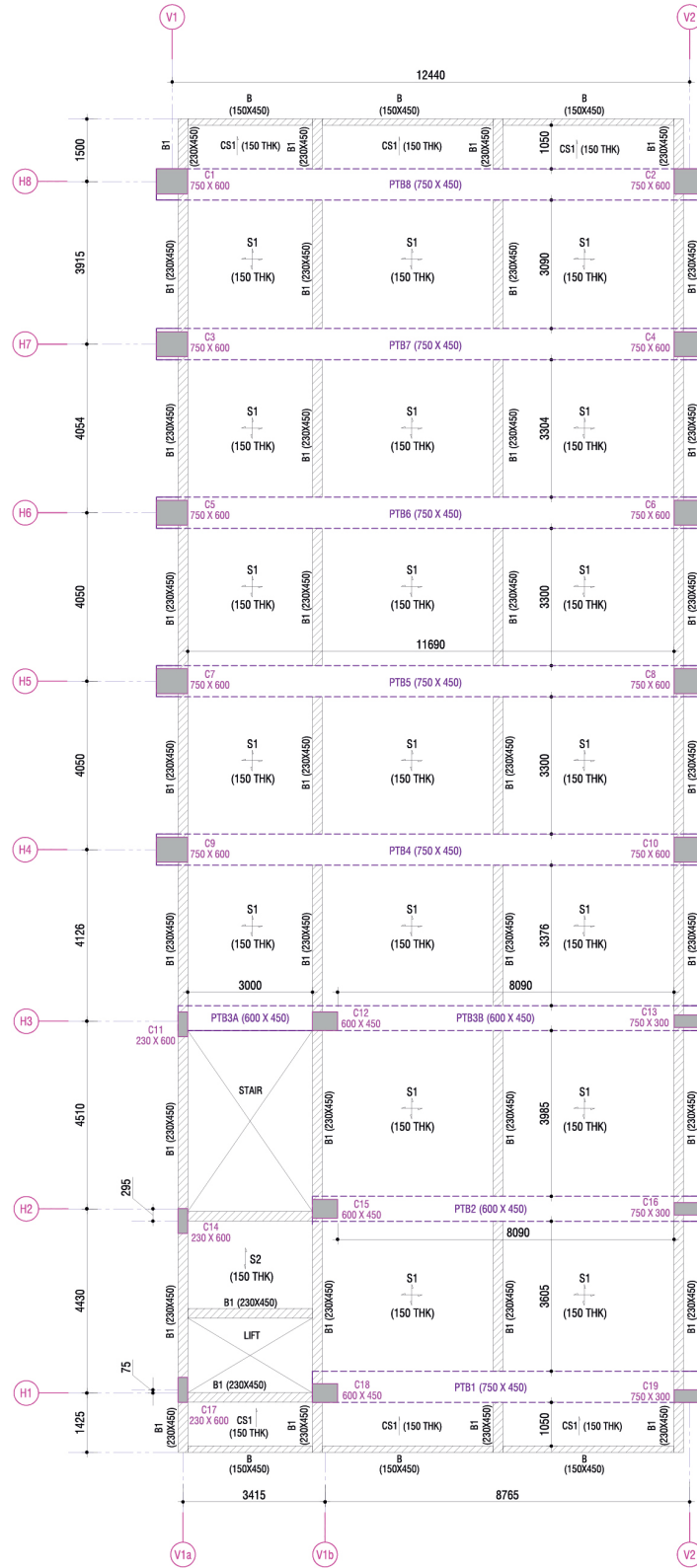
LIVE LOAD:	5.0 KNP/M ²
FLOOR FINISH:	2.0 KNP/M ²

PT BEAM WITH PT SLAB



LIVE LOAD:	10.0 KN/M ²
FLOOR FINISH:	2.0 KN/M ²

PT BEAM WITH RCC SLAB



LIVE LOAD:	5.0 KN/M ²
FLOOR FINISH:	2.0 KN/M ²

ON SITE EXPLORATION: PHOTOGRAPHY OF VARIOUS GEOMETRIES



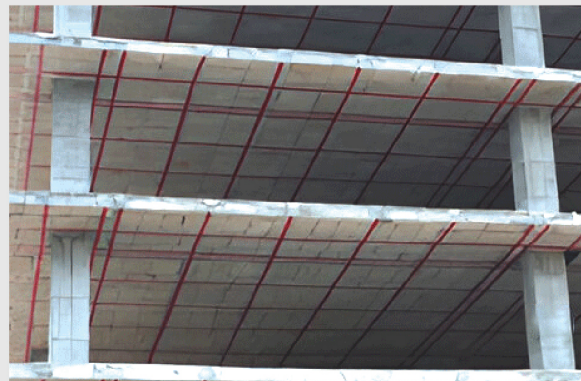
FLAT SLAB WITH DROP CAP

A flat slab supported with enlarged drop caps to control punching shear and reduce reinforcement congestion. The thickened zone around the column improves load transfer and keeps the slab behavior stable under heavy vertical forces.



PT BEAM WITH PT SLAB

A post-tensioned beam working together with a post-tensioned slab to carry larger spans with controlled deflection. The combined system distributes loads efficiently, reduces overall concrete volume, and delivers stronger structural performance compared to conventional RC framing.



FLAT PLATE

A uniform-thickness slab directly supported on columns without beams or drop caps. It offers a clean underside, simple formwork, and efficient load distribution for typical floor spans while maintaining a minimal structural depth.

OUR CLIENTS

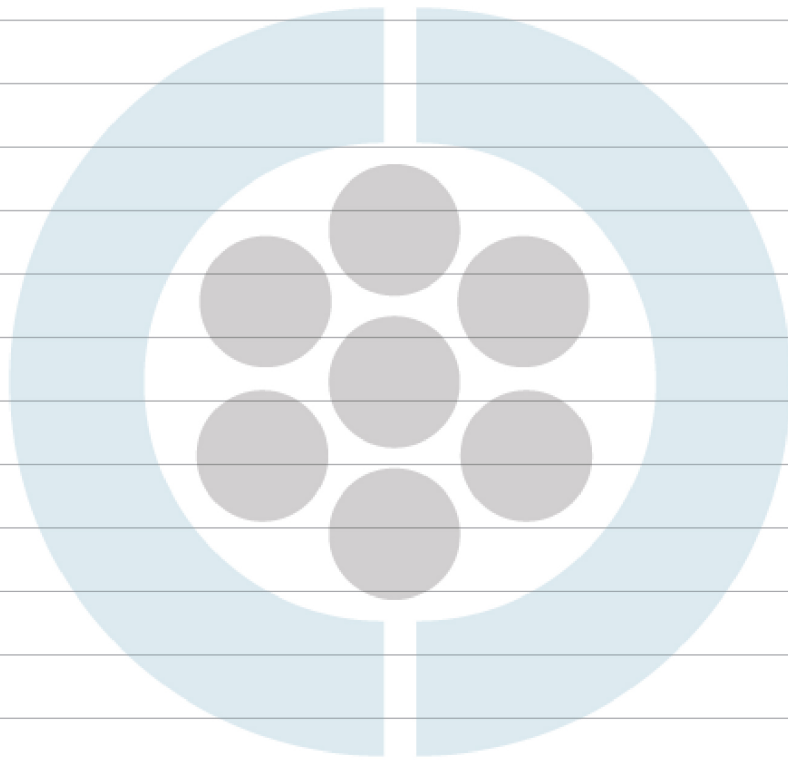


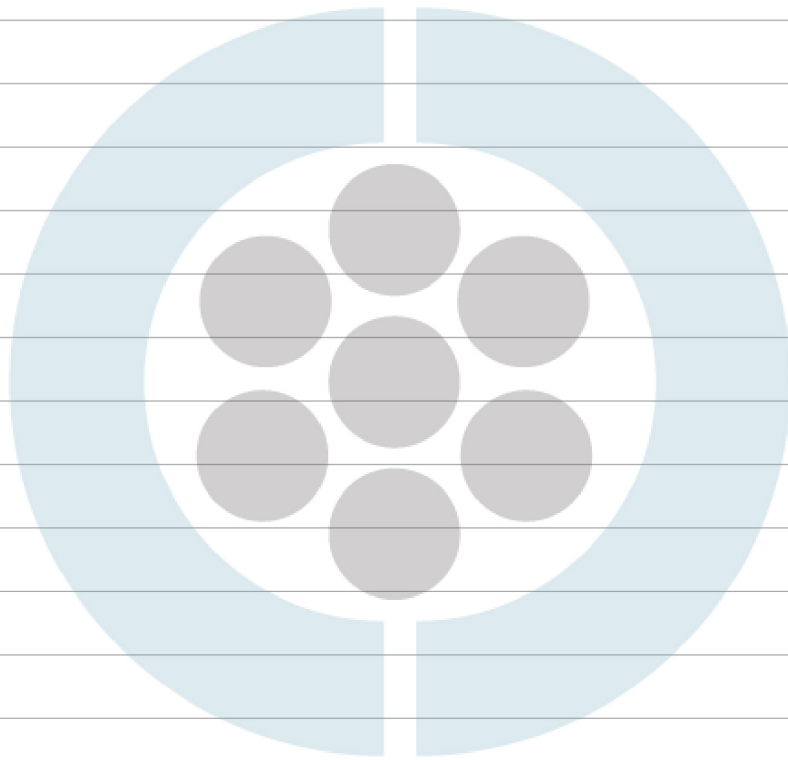
OUR CLIENTS



OUR CLIENTS







PROVIDING SERVICES

Maharashtra | Madhya Pradesh | Gujarat | Chhattisgarh
Telangana | Andhra Pradesh | Uttar Pradesh



HEAD OFFICE : MUMBAI

C - 404, Kailash Business
Park, Vikhroli West, Mumbai,
Maharashtra - 400079

HYDERABAD

Pramukh Residency, 5th Floor,
Plot No.38, D.V. Colony, Minister
Road, Hyderabad, Telangana - 500003

VADADARA

702-703, Block 1A, East Avenue,
Sarabhai Campus, Dr. Vikram
Sarabhai Marg, Near Genda Circle,
Vadodara, Gujarat - 390023

PUNE

Office No.126, G- Wing,
Jay Ganesh Samarajya,
Spine Road, Bhosari,
Pune - 411039

INDORE

A-88 Pt. Dindayal
Upadhyay Nagar Sukhliya,
Indore, Madhya Pradesh - 452010

LUCKNOW

Vishesh khand-2,
Vijayipur Gomati nagar,
lucknow, Uttar Pradesh- 226010

