PRO-CAST

Solid Foundations,
Strong Futures.



# PRECAST CONCRETE SOLUTIONS

## PRESTRESSED BEAMS

MS
SIRIM



# INTRODUCTION

Prestressed beams are essential in modern construction, offering enhanced strength and durability. By pre-tensioning steel tendons within the concrete, they counteract tensile forces, allowing for longer spans and greater load-bearing capacity. This makes them ideal for large-scale projects like bridges and high-rise buildings, ensuring improved performance and structural efficiency.

# SPECIFICATION OF PRESTRESSED BEAMS

## Beam Types

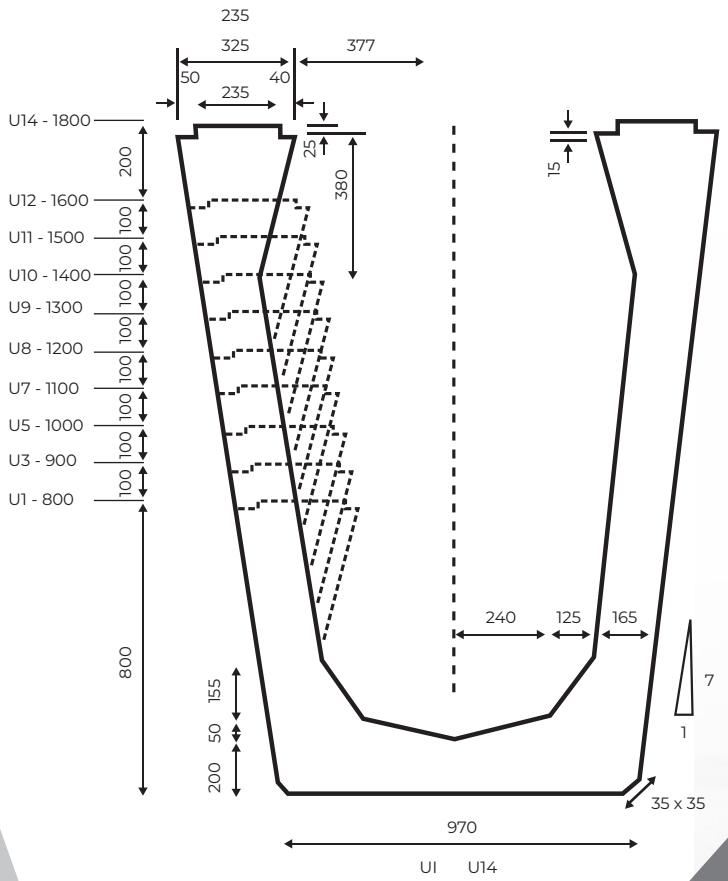
U beam, T beam, TM beam, I beam and JKR standard T beam.
Other profiles
are available upon request.

## Beam Length

Length of beam is limited up to 30m in
consideration of transportation constraint in mind.

## Concrete Charateristic Strength

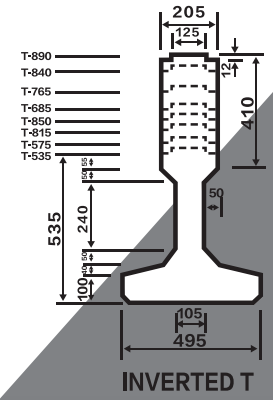
50 n/mm2 with transfer strength of 40 n/mm2



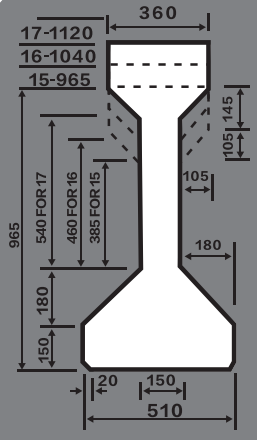
# DIMENSION AND SECTION PROPERTIES

| Beam Series | | Unit | U1 | U3 | U5 | U7 | U8 | U9 | U10 | U11 | U12 | U14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth | D | mm | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1800 |
| Length | | m | 14 - 18 | 14.5-20 | 16-22 | 17.5-24.5 | 19-26.5 | 21-28.5 | 22.5-30 | 24-30 | 25.5-30 | 29-31.75 |
| Weight | | $kN/m^2$ | 11.44 | 12.21 | 12.98 | 13.75 | 14.52 | 15.29 | 16.06 | 16.83 | 17.60 | 19.44 |
| Sectional Area | | $mm^2$ | 466944 | 498334 | 529756 | 561179 | 592609 | 624035 | 655458 | 686881 | 718291 | 797841 |
| Neutral Axis | Yt | mm | 445 | 498 | 551 | 603 | 655 | 707 | 759 | 810 | 862 | 973 |
| | Yb | mm | 355 | 402 | 449 | 497 | 545 | 593 | 641 | 690 | 738 | 827 |
| Moment of Inertia | Ixx | $x10^9\ mm^4$ | 29.9 | 41.7 | 56.0 | 72.9 | 92.7 | 115.4 | 141.3 | 170.4 | 202.9 | 279.4 |
| Section Modulus | Zt | $x10^6\ mm^3$ | 67.1 | 83.7 | 101.7 | 121.0 | 141.5 | 163.2 | 186.1 | 210.2 | 235.4 | 287.3 |
| | Zb | $x10^6\ mm^3$ | 84.0 | 103.6 | 124.6 | 146.8 | 170.1 | 194.7 | 220.3 | 247.1 | 274.9 | 337.7 |

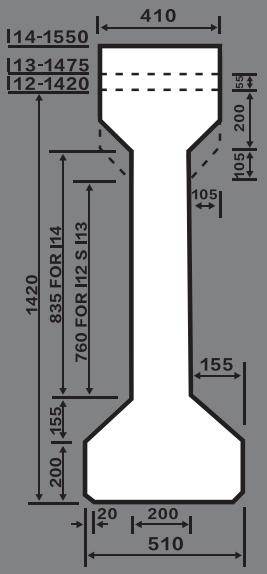
# PRE-TENSION BEAM



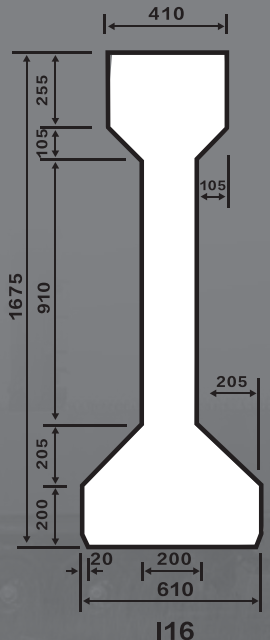
INVERTED T



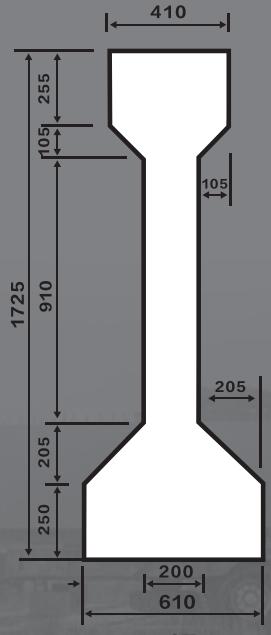
15,16,17



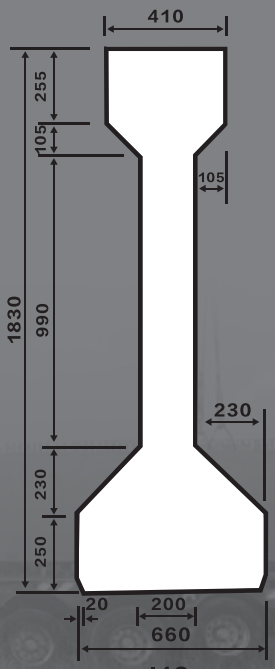
I12,I13,I14



I16



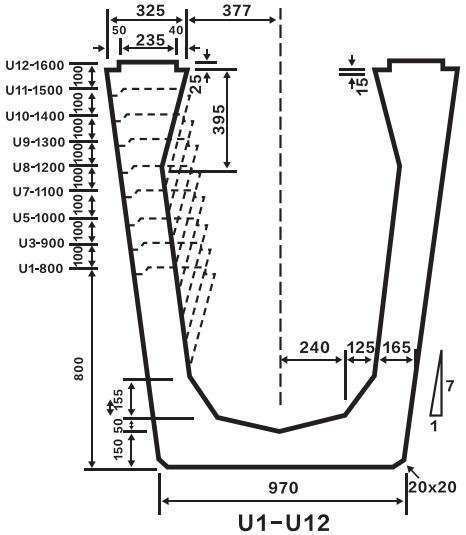
I17



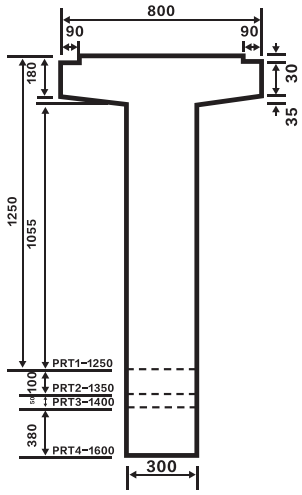
I18

# DETAIL

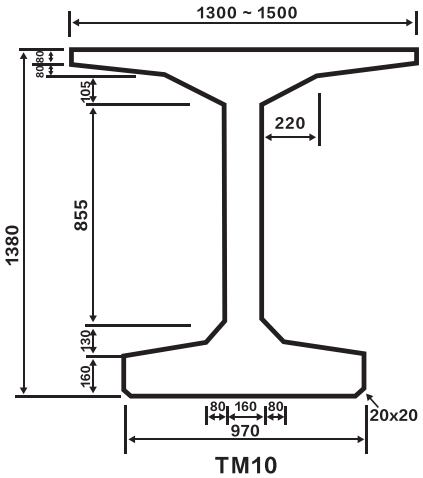
## PRE-TENSION BEAM



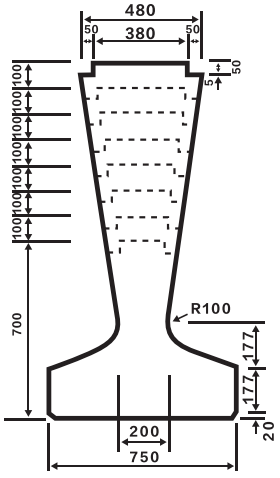

U1-U12



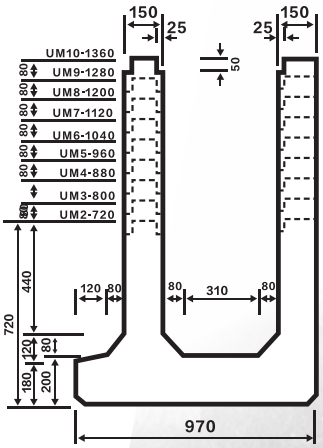

PRT




TM10




Y1-Y8




UM2-UM10


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