



Installation Manual

WOOD & STEEL GUARDRAILS

Model T18 4M

Containment level N2

Working width W7 (2.30m)

Severity class : A



N° : 1826 – CPD – 09 – 02 – 06 – DR4

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1826



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09

1826-CPD-09-02-06-DR4

EN 1317-5

**Barrière mixte bois-métal simple lisse (support tous les 4 mètres)
à utiliser dans les zones de circulation**

**Mixed wood-steel barrier simple beam (posts every 4 metres)
to be used in circulation areas**

Glissière/Guardrail type T18 4M

Performance au choc – Performance under impact :

- a) Niveau de retenue : N2 - Containment level: N2
- b) Sévérité de choc : A - Impact severity level: A
- c) Largeur de fonctionnement : W=2,5 m (W7)
Working width: W=2,5 m (W7)
- d) Déflexion dynamique maximale : Dm=2,3 m
Maximum dynamic deflection : Dm=2,3 m

Durabilité – Durability:

S235JR, galvanisé selon EN ISO 1461
S235JR, galvanised according EN ISO 1461
Bois traité selon la norme EN 335
Wood treated according to the EN 335 standard

Substance dangereuse : aucune

Dangerous substance : none

WOOD & STEEL GUARDRAIL MODEL « T18 4M »

Brief description :

The system does include :

- C100 steel posts with 4 m spacing
- pressure treated wooden spacers diameter 18 - TE 18
- 4m - long steel backed timber rails with logs Ø18 cm; wood & steel components are assembled together on production site with bolts TRCC 16x160
- a main fishplate connecting 2 rails: TL62
- a reinforcing fishplate TL 20 joining 2 M16 nuts
- 4 TRCC 16x160 bolts securing the assembly of the rail; 3 of them are pre mounted on production site.

BILL OF MATERIALS FOR 4M. (Dimensions in millimeters)

Item	Tertu Code	Description	Quantity	Weight
Steel post	C100	Post C100x50x25x5 Length = 2000 or 1500	1	17 kg
Wooden Spacer	TE 18	Wooden spacer Ø180 pre-drilled with notch, length :0.73m	1	9 kg
Rail model T	T184M	Includes : 1 pressure treated log Ø180, length 3980 with 4 holes + 1 steel U channel U90x45x4, length 3920 with 4 bolts welded to the U profile. Factory-assembled with 3 TRCC 16x160 bolts	1	68 kg
Connecting fishplate	TL62	Structural steel 80x10, length 620 1 steel fuse box welded	1	4.21 kg
Reinforcing fishplate	TL20	Structural steel 60x4, length 200	2	0.33 kg
TRCC round head bolt	M16x160 M16x140	Class 5.8 Class 5.8	3 pre-mounted 1	0.29 kg 0.27 kg
Nut	M16	Class 5	4	0.03 kg
Fishplate for terminal	TL41	Structural steel 80x10, length 410	1	2.10 kg
TH HEX head bolt	M16x40	Class 5.8	1	0.05 kg

Weight per 1m = 24.78 Kg including steel post C100 in 2 m

Installation method

Recommended tools :

The T18 4M can be installed with the same expertise level and tools as required for steel crash barrier in particular:

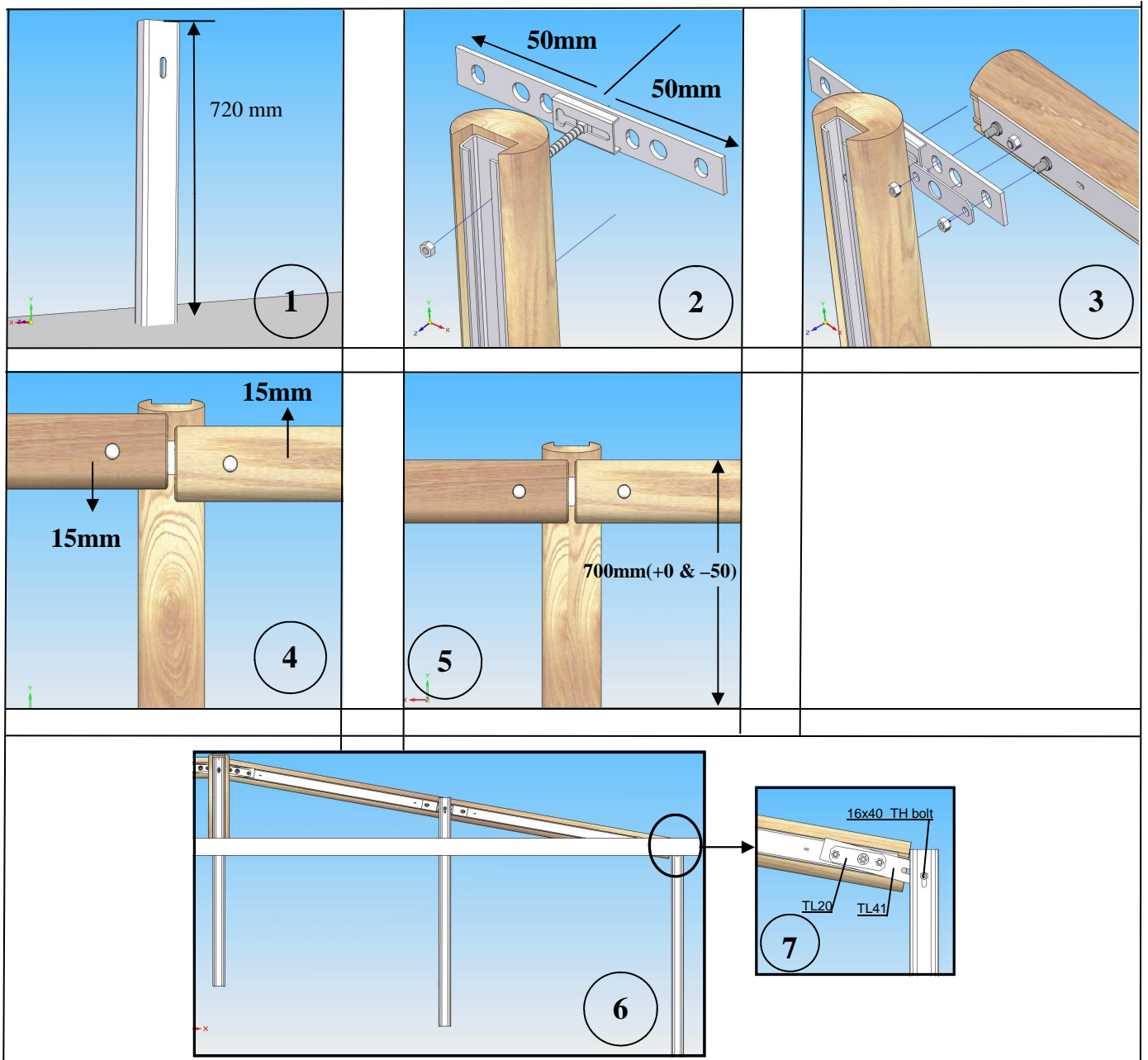
Post driving machine adapted to suit C100 profile post, a torque wrench, a socket wrench / nut spanner (M16 Bolt), compressor and lorry mounted lifting arm (if applicable).

Post installation (drawing 1)

Posts C100 in 2m or 1.5m length shall be driven into the ground every 4m; service height above ground = 720 mm.

Spacer and fishplate installtion (drawing 2)

Once the C100 post installed, place the wooden spacer, then set up the fishplate TL62 having previously inserted the TRCC16-140 bolt inside the fuse box and finally bolt the complete set onto the C100 posts



Rail T18 installation (drawing 3)

Place the 4m-rails with the welded bolts facing the fishplate TL62, introduce the said bolts inside the TL62, then place the 2 reinforcing fishplates TL20, then tighten the complete set with the 4 M16 nuts. (Figure 4)

Adjustement (drawings 4 & 5)

After the several components installation, it is possible to adjust horizontally the connexion between the rails thanks to the TL62 oblong holes; the height of the rail can be adjusted whilst using the C100 posts openings.

End terminals treatment drawings 6 & 7)

The standard terminal includes : 4M T18 rail, a TL41 fishplate, a TL20 fishplate and a TH16-40 bolt (figure 7)
The terminals may be dropped and burried into the ground, or horizontally inserted in the bank. The T18 4M can be also connected to an energy absorbing end terminal Euro ET (level P4 according to ENV 1317-4 - installation drawing upon request).

RAIL SERVICE HEIGHT

The top-line of the rail face should be 70 cm (+0.5cm) above the average elevation of the road shoulder in a 50 cm wide band in front of the said rail. At not time, should the center-line of the rail face be less than 55 cm above the average elevation of the road shoulder in front of the rail section in question

For the rails, the tightening torque is 140 Nm

MINIMAL LENGTH

The minimum recommended length required is 60 lm, with 2x4 m end terminals included, in order to ensure a proper correct anchorage of the system. For shorter lengths, it is recommended to contact our Export Department for a prior study.

PARTICULAR SITUATIONS

Curvatures

Fishplates TL 62 oblongs holes allow to cover a 6° angle between 2 rails devices in the horizontal or vertical plan. Therefore, it is possible to follow easily highway horizontal or vertical curvature. The T18 4M is adapted to follow radii ≥ 20 m. For radii < 20 m, it is recommended to use the T18 2M with 2m rails.

Soil conditions

The anchoring system behavior depends on the soil quality. Therefore, it is important to evaluate on site the soil's capacity of resistance which must be adequate to guaranty the proper anchoring of the crash barriers section. The T18 4M has been tested with steel post in 2m. However, 1.5m and 2.5m long posts can be used if necessary, according to the soil conditions measured during the ground testing procedure.

Installation in front of a drop

It is necessary to maintain a distance of 1.30M between the front side of the rail and the beginning of the slope.

Repairs

All damaged parts must be systematically replaced according to the product installation instructions.

Remark

During an impact, components weighing more than 2kgs can be detached

Traceability, components marking

Except the hardware, every single steel components is identified with a marking: Tertu logo (except for C100 post), manufacture stamp, batch number and CE official logo

Packaging

Rails are delivered by packets of 12 units, wooden spacers are packed on pallets.

