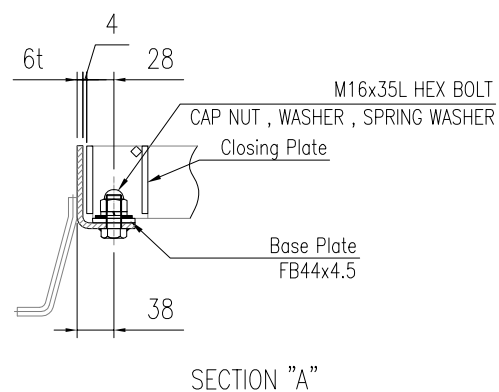
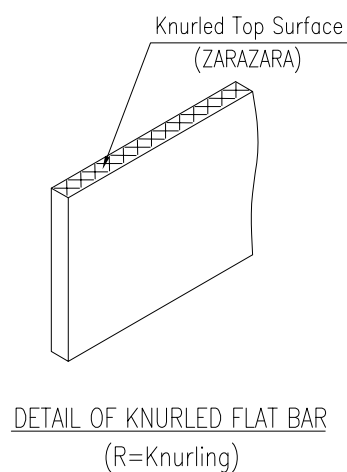


DETAIL GRATING FOR GUTTER SPAN 800 MM.
(Q'TY 1 SET.)



NOTE

- TYPE OF GRATING : RFB100x6 BBP=35.3 , TB7x7 TBP=100
END PLATE : FB90x6
- TYPE OF FRAME : PL-111x60x6t (Bending Type)
- SURFACE FINISHING GRATING : HOT DIP GALVANIZED ASTM (A123)
- SURFACE FINISHING FRAME : HOT DIP GALVANIZED ASTM (A123)
- DESIGN CONDITION LOAD : HEAVY DUTY T-25 (Parallel to main structure)
Impact coefficient = 0.4

PROJECT TITLE		Typical_Drawing							
CHECKED BY	CHATCHAI	DETAIL GRATING FOR GUTTER			1				
DRAWN BY	THITIKORN.P	Span = 800			2	1			
DATE DRAWN	27/04/2020	DDR NO.	DDR20178	JOB NO.	-	DWG.NO.	DW20178F07	REV.	0
SCALE	NTS	DAIKURE (THAILAND) CO. , LTD.							

1	07/05/2020	Add Page 1/2
REV.	REV.DATE	DESCRIPTION

1. Design Condition

Load T-25

Load on one rear wheel P = 100 kN.
Contact area a x b = 20 cm. x 50 cm.

Vehicle direction Parallel to main structure

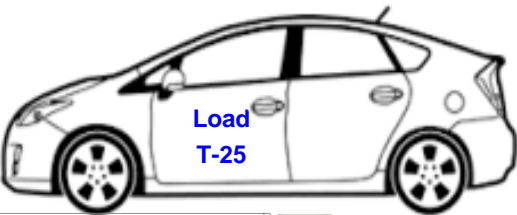
Impact coefficient i = 0.4

Span L = 80 cm. (L' = 80 cm.)

Allowable stress $\sigma_a = 18 \text{ kN/cm}^2$ **18**

Allowable bending $\delta/L = 1 / 300$

← Input



Parallel to main structure

2. Grating, Cressection performance

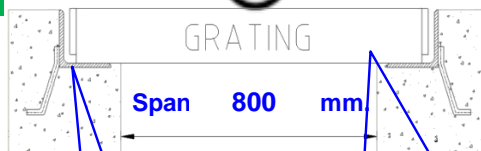
Main structure FB100x6

Pitch (p) = 3.53 cm.

Cross-sectional performance, others • Geometrical moment of iner
 $I = 50 \text{ cm}^4/\text{piece}$

• Section modulus
 $Z = 10 \text{ cm}^3/\text{piece}$

• Young's modulus
 $E = 20000 \text{ kN/cm}^2$



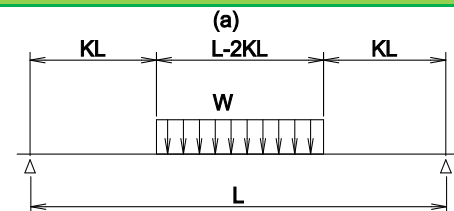
Frame

Grating : **FB100x6**
BB Pitch : **35.3 mm.**

3. Load, Bending moment

3.1 Loading form

$$K = \frac{L - a}{2L} = \frac{80 - 20}{2 \times 80} = 0.375$$



3.2 Load (per unit area : kN/cm2)

$$w = \frac{P(1+i)}{a b} = \frac{100 \times (1 + 0.4)}{20 \times 50} = 0.14$$

3.3 Load (main structure per one : kN)

$$W = w p (L - 2 K L) = 0.14 \times 3.53 \times (80 - 2 \times 0.375 \times 80) = 9.9$$

3.4 Bending moment (: kN · cm)

$$M = \frac{W(L + 2 K L)}{8} = \frac{9.9 \times (80 + 2 \times 0.375 \times 80)}{8} = 173$$

4. Stress

$$\sigma = \frac{M}{Z} = \frac{173}{10} = 17.29 \text{ kN/cm}^2 \leq \sigma_a \text{ kN/cm}^2$$

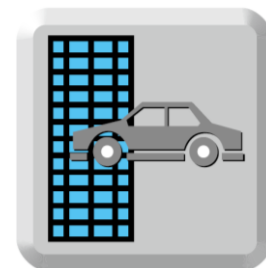
O.K.

5. Bending (Deflection)

$$\delta = \frac{W L^3 (1 + 2 K) (5 - 4 K^2)}{384 E I} = \frac{9.9 \times 80^3 \times (1 + 2 \times 0.375) \times (5 - 4 \times 0.375^2)}{384 \times 20000 \times 50} = 0.1023 \text{ cm.}$$

$$\delta/L = 1 / 782 \leq 1 / 300$$

O.K.



Parallel to main structure