

Wilmaplex Pty Ltd.
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Mr Graham storey

RE/ Wilmaplex Face & Top Joist Hangers Design Capacity

This is to confirm the design capacity of the following **Wilmaplex** Joist Hangers:

1. G300 Z275, 1.2mm thickness, Face Mount I-Joist Hangers, (IJFM235/40, 297/40; 190/45, 240/45, 300/45; 234/50, 297/50; 200/60, 235/60, 290/60; 200/65, 235/65, 290/65; 235/70, 290/70; 235/90, 290/90), see Figure 1 for a typical hanger. The evaluation was carried out via testing and computations based on 3.75x40mm Wilmaplex galvanized flat head nails and a support beam of 290x45mm MGP10 radiata pine and Tilling's smart frame I joist. The design capacities are given in Table 1.

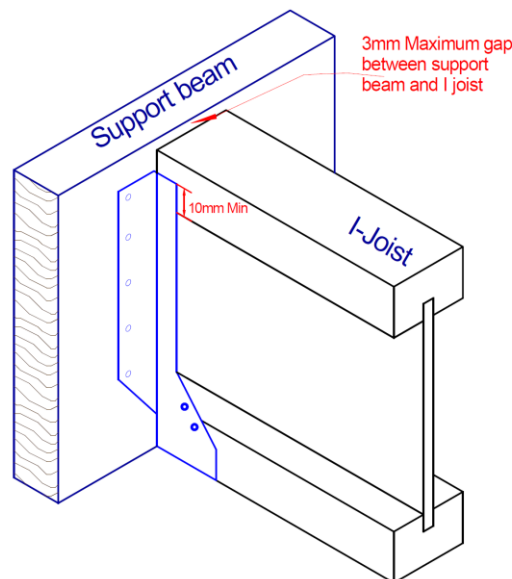


Figure 1 Details of Face Mount Joist connectors

Notes:

1. A capacity factor $\phi = 0.85$ and a duration factor $k_1 = 0.77$ for permanent and floor imposed actions was applied to all the capacities in Table 1.
2. The values in Table 1 apply to Category 1 joints, reduce design capacities for joint groups 2 and 3 by using factors 0.94 and 0.88 consecutively.
3. Computations were undertaken in accordance with the relevant Standards, AS1720.1, AS/NZS1170 series and AS4055.
4. Should these hangers be mounted on a 35mm support beams, multiple all design capacities by a factor of 0.88.

5. Z275 steel was used to meet the requirements of AS1684.2 and AS1684.3 for products used in an internal environment.
6. Use full depth hangers to provide lateral restraint of the I joist flange.

Table 1 Design Capacities of **Wilmaplex** Face Mount I Joist Hangers

Face Mount I joist hanger ID	Nails per hanger on the support beam	Design capacity, φN_j (kN), for supporting beam with joint group JD4, based on 1.2G+1.5Qf load case
IJFM190-200 (up to 90mm width)	8	6.0
IJFM234-240 (up to 90mm width)	10	7.7
IJFM290-300 (up to 90mm width)	12	8.7

2. G300 Z275, 1.2mm thickness, top mount I-Joist Hangers, (IJTM200/45, 240/45; 245/45, 200/50, 240/50; 200/65, 240/65, 245/65; 302/65, 240/70, 300/70; 200/90, 240/90, 245/90, 300/90), see Figure 2 for a typical hanger. The evaluation was carried out via testing and computations based on 3.75x40mm Wilmaplex galvanized flat head nails and a support beam of 290x45mm MGP10 radiata pine and Tilling’s smart frame I joist. The design capacities are given in Table 2.

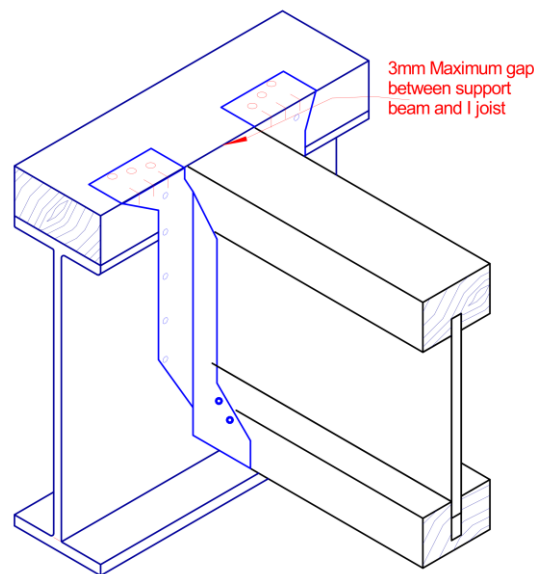


Figure 2 Details of Top Mount Joist connectors

Table 2 Design Capacities of **Wilmaplex** Top Mount I Joist Hangers

Top Mount I joist hanger ID	Top Nails (for both top wings)	Design capacity, φN_j (kN), for supporting beam with joint group JD4, based on 1.2G+1.5Qf load case
IJTM200-302 (up to 90mm width), see the complete range in 2 above.	6	5.8

Same notes in 1 above apply.

Restrain any hanger rotation by packing the space between the hanger and the steel support beam. Fix a screw (30x6G) at the bottom of the hanger to the base flange of the I-joist.

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