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02 July 2018

RE/ Wilmaplex Heavy Duty Joist Hangers (JHHD) Design Capacity

This is to confirm the design capacity of Wilmaplex G300 Z275, 1.2mm thickness, Joist Hangers Heavy Duty, (JHHD 45/300, 60/90; 60/140, 60/180, 60/220; 60/300, 65/90; 65/140, 65/180, 65/220; 65/300, 70/90; 70/140, 70/180, 70/220; 70/300, 90/90; 90/140, 90/180, 90/220; 90/300), 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 beams of 90x45mm F7 radiata pine and. The design capacities are given in Table 1.

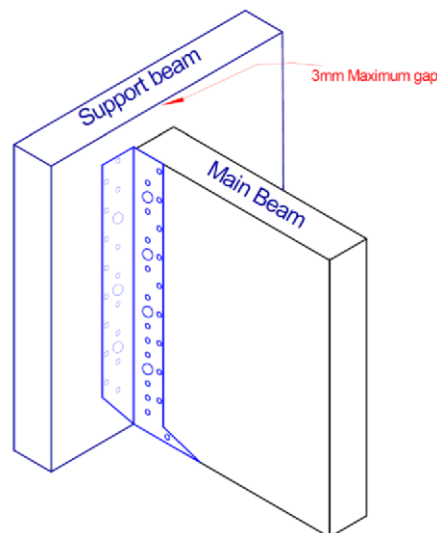


Figure 1 **Details of Heavy duty Joist Hanger connectors**

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 the support beam be 35mm, multiply 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 beams.

Table 1 Design Capacities of Wilmaplex Heavy Duty joist hangers

Heavy Duty 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
JHHD 45x300	12	7.0
JHHD 60x90, 60x140, 60x180	8	5.8
JHHD 60x220	10	7.3
JHHD 60x300	12	8.7
JHHD 65x90, 65x140, 65x180	8	5.8
JHHD 65x220	10	7.3
JHHD 65x300	12	8.7
JHHD 70x90, 70x140, 70x180	8	5.8
JHHD 70x220	10	7.3
JHHD 70x300	12	8.7
JHHD 90x90, 90x140, 90x180	8	5.8
JHHD 90x220	10	7.3
JHHD 90x300	12	8.7

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