

12	11	10	9	8	7	6	5	4	3	2	1
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SLIDER TRAVEL = 20MM

LOAD = 988 N

SLIDER
 $\Sigma F_{\text{NET X}} = 0$
 $= -988 - 0.21 * N_{\text{BASE}} - 0.21 * N_{\text{ANGLE}} * \cos(45^\circ) + N_{\text{ANGLE}} * \cos(45^\circ)$
 $= -988 - 0.21 * N_{\text{BASE}} + 0.559 * N_{\text{ANGLE}}$



$$\Rightarrow 0.21 \cdot \mathbf{N}_{\text{BASE}} - 0.559 \cdot \mathbf{N}_{\text{ANGLE}} = -988$$

$$\Sigma \mathbf{F}_{\text{NET Y}} = 0$$

$$= -23.45 + \mathbf{N}_{\text{BASE}} - 0.21 \cdot \mathbf{N}_{\text{ANGLE}} \cdot \sin(45^\circ) - \mathbf{N}_{\text{ANGLE}} \cdot \sin(45^\circ)$$

$$= -23.45 + \mathbf{N}_{\text{BASE}} - 0.856 \cdot \mathbf{N}_{\text{ANGLE}}$$

$\Rightarrow -N_{\text{BASE}} + 0.856 \cdot N_{\text{ANGLE}} = -23.45$
BY $Ax = b$:
 $N_{\text{BASE}} = 2264.6 \text{ N}$
 $N_{\text{ANGLE}} = 2618.2 \text{ N}$

$$\begin{aligned} \Sigma F_{\text{NET } X} &= 0 \\ &= N_{\text{WALL}} - N_{\text{ANGLE}} * \cos(45^\circ) + 0.21 * N_{\text{ANGLE}} * \cos(45^\circ) \\ &= N_{\text{WALL}} = 1462.564 \end{aligned}$$

$$\begin{aligned} \Sigma F_{\text{NET Y}} &= 0 \\ &= -P - 6.57 + 0.21 \cdot N_{\text{WALL}} + N_{\text{ANGLE}} \cdot \sin(45^\circ) + 0.21 \cdot N_{\text{ANGLE}} \cdot \sin(45^\circ) \\ &= -P + 25.10 - 6.57 \\ &= -P + 18.53 \end{aligned}$$

Diagram illustrating the calculation of the design force P for a corner connection. The vertical plate is subjected to a force F_w . The horizontal plate is subjected to a force N_{ANGLE} . The design force P is calculated as:

$$P = 2540.698$$

Diagram showing the force components on the base of the corner bracket. The corner bracket is on the left, and the base plate is on the right. A force N_{ANGLE} acts on the corner bracket at a 45° angle. A force $F_{\text{ANGLE}} = 0.21 * N_{\text{ANGLE}}$ acts on the base plate. A force $F_{\text{BASE}} = 0.21 * N_{\text{BASE}}$ acts on the base plate.

Diagram illustrating the relationship between DRIVER and SLIDER. DRIVER is connected to NBASE, which is connected to SLIDER.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES:	FINISH:	DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
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MINIMUM FORCE "P" REQUIRED TO FULLY EXTEND THE SLIDER

SLIDER TRAVEL = 20MM