Technical Sheet

NP
Nail Plate

Nail plates are used to connect two or more timber members together. They are available in a variety of sizes.



Features

Material

- Pre-glavanised mild steel. Grade S250GD

Benefits

- Versatility of applications
- Can be bent on site

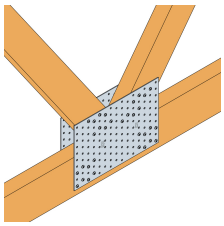
Applications

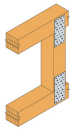
Header member

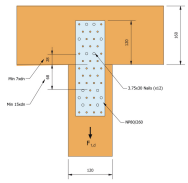
- **Supporting member:** solid wood, glued-laminated wood, composite lumber, etc.
- **Supported member:** solid wood, glued-laminated wood, composite lumber, triangular trusses, profiles.

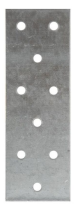
Applications

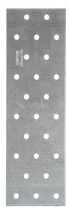
- Post/beam connection
- Jointing
- Repairs
- Assemblies requiring a special bending on site, etc

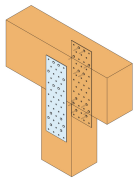














NP nail plate



Attaching wood rafters and square butting rafters.

Technical Sheet

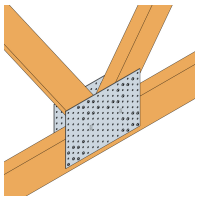
NP
Nail Plate

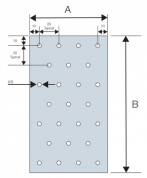
SIMPSON Strong-Tie

Technical Data

Technical Sheet

NP
Nail Plate





Dimensions and characteristic values

Reference	Connector Dimensions							Nail plates capacity
	Other		Product Dimensions[mm]			Joist		Characteristic Capacities[kN]
	Weight[kg]	Qty per Box	A[mm]	B[mm]	Thickness[mm]	Round		$R_{1,k}$
						Qty	Diameter	
NP15/40/120	0.053	100	40	120	1.5	9.0	Ø5	min (n x Rlat,k ; 13.4/kmod)
NP15/80/140	0.13	50	80	140	1.5	25.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/180	0.165	50	80	180	1.5	32.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/200	0.18	50	80	200	1.5	35.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/220	0.198	50	80	220	1.5	39.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/260	0.22	50	80	260	1.5	46.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/100/140	0.16	50	100	140	1.5	32.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/200	0.22	50	100	200	1.5	45.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/240	0.26	50	100	240	1.5	54.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/300	0.336	50	100	300	1.5	68.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/140/180	0.28	50	140	180	1.5	59.0	Ø5	min (n x Rlat,k ; 46.8/kmod)
NP15/140/200	0.31	50	140	200	1.5	65.0	Ø5	min (n x Rlat,k ; 46.8/kmod)
NP15/140/260	0.4	50	140	260	1.5	85.0	Ø5	min (n x Rlat,k ; 46.8/kmod)
NP15/160/340	0.59	25	160	340	1.5	128.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/200/260	0.56	25	200	260	1.5	124.0	Ø5	min (n x Rlat,k ; 66.8/kmod)
NP15/220/300	0.72	25	220	300	1.5	158.0	Ø5	min (n x Rlat,k ; 73.5/kmod)
NP20/40/120	0.071	100	40	120	2	9.0	Ø5	min (n x Rlat,k ; 17.8/kmod)
NP20/40/160	0.094	50	40	160	2	12.0	Ø5	min (n x Rlat,k ; 17.8/kmod)
NP20/50/200	0.15	50	50	200	2	20.0	Ø5	min (n x Rlat,k ; 23.8/kmod)
NP20/60/140	0.12	50	60	140	2	18.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP20/80/200	0.232	50	80	200	2	35.0	Ø5	min (n x Rlat,k ; 35.6/kmod)
NP20/80/240	0.29	50	80	240	2	42.0	Ø5	min (n x Rlat,k ; 35.6/kmod)
NP20/80/300	0.35	50	80	300	2	53.0	Ø5	min (n x Rlat,k ; 35.6/kmod)
NP20/100/140	0.204	50	100	140	2	32.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/200	0.3	50	100	200	2	45.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/240	0.35	50	100	240	2	54.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/260	0.38	50	100	260	2	59.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/300	0.45	25	100	300	2	68.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/400	0.6	25	100	400	2	89.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/500	0.75	25	100	500	2	112.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/120/200	0.35	50	120	200	2	55.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/240	0.41	25	120	240	2	66.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/260	0.48	25	120	260	2	72.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/300	0.53	25	120	300	2	83.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/400	0.689	25	120	400	2	110.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/140/400	0.83	25	140	400	2	130.0	Ø5	min (n x Rlat,k ; 62.4/kmod)
NP20/160/300	0.69	25	160	300	2	113.0	Ø5	min (n x Rlat,k ; 71.3/kmod)

With
n: the number of nails
$R_{lat,k}$: Shear capacity of the fastener

Technical Sheet

NP
Nail Plate

Reference	Connector Dimensions							Nail plates capacity
	Other		Product Dimensions[mm]			Joist		Characteristic Capacities[kN]
	Weight[kg]	Qty per Box	A[mm]	B[mm]	Thickness[mm]	Round		$R_{1,k}$
						Qty	Diameter	
NP20/160/400	0.93	20	160	400	2	150.0	Ø5	min (n x Rlat,k ; 71.3/kmod)
NP20/200/300	0.89	20	200	300	2	143.0	Ø5	min (n x Rlat,k ; 89.1/kmod)
NP20/350/40	-	-	350	40	2	34.0	Ø5	-

With
n: the number of nails
$R_{lat,k}$: Shear capacity of the fastener

Installation

Fixing

Nail plates are commonly used with:

- CNA nails Ø4.0
- CSA screws Ø5.0

Installation

The performance values stated in the table refer to the nail plate's maximum tensile strength. The fastener capacity must be checked separately in accordance to BS EN 1995-1-1.
The characteristic resistance of an NP nail plate assembly under tensile load $R_{1.k}$ is:
$R_{l.k}$= min ($R_{1.st}$ / k_{mod}; R_{upper}; R_{lower})
Where:

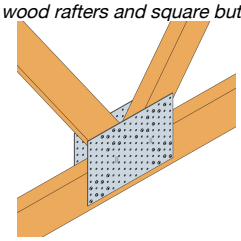
- $R_{1.st}$: the maximum characteristic value under tensile load as specified in the table.
- R_{upper}: the resistance of the group of fasteners in the upper wall
- R_{lower}: the resistance of the group of fasteners in the lower wall

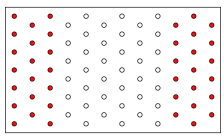
R_{upper} = $ne_{f.upper}$ x $R_{lat.k}$ R_{lower} = $n_{ef.lower}$ x $R_{lat.k}$
Where:

- $n_{ef.upper}$: the effective number of fasteners in the upper wall
- $n_{ef.lower}$: the effective number of fasteners in the lower wall
- $R_{lat.k}$: the strength of the chosen fastener



Attaching wood rafters and square butting rafters.





Winchester Road Cardinal Point Tamworth Staffordshire B78 3HG
tel: +44 1827 255600
fax: +44 1827 255616
Copyright by Simpson Strong-Tie®
Information presented on this document is the exclusive property of Simpson Strong-Tie®
It is valid only when associated with products supplied by Simpson Strong-Tie®