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

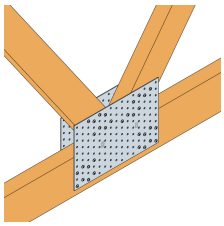
Applications

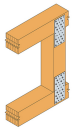
Header member

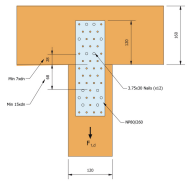
- **Supporting member:** solid wood, glued-laminated wood, composite lumber, etc.
- **Supported member:** solid wood, glued-laminated wood, composite lumber, triangular trusses, profiles.

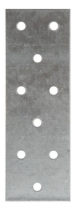
Applications

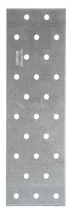
- Post/beam connection
- Jointing
- Repairs
- Assemblies requiring a special bending on site, etc

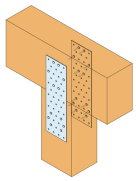














NP nail plate



Attaching wood rafters and square butting rafters.

Technical Sheet

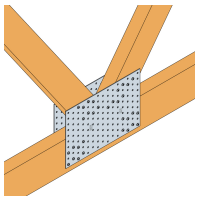
NP
Nail Plate

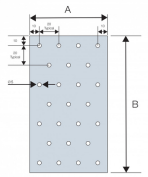
SIMPSON Strong-Tie

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]
	NOB nr.	Tun / DB nr.	Weight[kg]	Qty per Box	A[mm]	B[mm]	Thickness[mm]	Round		$R_{1,k}$
								Qty	Diameter	
NP15/40/120	41711615	1267914	0.053	100	40	120	1.5	9.0	Ø5	min (n x Rlat,k ; 13.4/kmod)
NP15/40/160	41711626	1267920	0.062	50	40	160	1.5	12.0	Ø5	min (n x Rlat,k ; 13.4/kmod)
NP15/50/200	41711634	1267926	0.11	50	50	200	1.5	20.0	Ø5	min (n x Rlat,k ; 17.8/kmod)
NP15/60/140	21218037	3779279	0.094	100	60	140	1.5	18.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/160	21217617	5653464	0.1	50	60	160	1.5	20.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/180	21218045	3779287	0.12	50	60	180	1.5	23.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/200	21217658	5653498	0.13	50	60	200	1.5	25.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/220	21217625	5653472	0.14	50	60	220	1.5	28.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/240	41863666	1280559	0.16	50	60	240	1.5	30.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/300	21217682	5653522	0.2	50	60	300	1.5	38.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/340	21217641	5653480	0.23	50	60	340	1.5	43.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/420	21217666	5653506	0.28	50	60	420	1.5	53.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/60/500	21217674	5653514	0.34	50	60	500	1.5	63.0	Ø5	min (n x Rlat,k ; 20/kmod)
NP15/80/100	21217708	5653605	0.091	50	80	100	1.5	18.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/140	21593918	8977811	0.13	50	80	140	1.5	25.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/180	21217955	5653530	0.165	50	80	180	1.5	32.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/200	41711653	1267928	0.18	50	80	200	1.5	35.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/220	21218052	3779139	0.198	50	80	220	1.5	39.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/240	21218060	1644095	0.22	50	80	240	1.5	42.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/280	21217732	5653613	0.25	50	80	280	1.5	49.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/300	21593926	8977829	0.26	50	80	300	1.5	53.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/340	21217757	5653548	0.3	50	80	340	1.5	60.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/80/420	21217773	5653639	0.37	50	80	420	1.5	74.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP15/100/140	21217807	5653654	0.16	50	100	140	1.5	32.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/200	41738756	1267931	0.22	50	100	200	1.5	45.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/220	21218078	3779147	0.247	50	100	220	1.5	50.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/240	21218086	1644103	0.26	50	100	240	1.5	54.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/300	21593934	8977837	0.336	50	100	300	1.5	68.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/340	21217856	5653688	0.37	50	100	340	1.5	77.0	Ø5	min (n x Rlat,k ; 33.4/kmod)
NP15/100/380	21593942	8977845	0.42	25	100	380	1.5	86.0	Ø5	min (n x Rlat,k ; 40.1/kmod)
NP15/120/160	21217849	5653662	0.22	50	120	160	1.5	44.0	Ø5	min (n x Rlat,k ; 40.1/kmod)
NP15/120/220	21218094	1644111	0.29	50	120	220	1.5	61.0	Ø5	min (n x Rlat,k ; 40.1/kmod)
NP15/120/240	41738760	1267992	0.32	50	120	240	1.5	66.0	Ø5	min (n x Rlat,k ; 40.1/kmod)
NP15/120/300	41738775	1267998	0.38	25	120	300	1.5	83.0	Ø5	min (n x Rlat,k ; 40.1/kmod)
NP15/140/200	21217880	5653704	0.31	50	140	200	1.5	65.0	Ø5	min (n x Rlat,k ; 46.8/kmod)
NP15/140/240	21593959	8977852	0.37	50	140	240	1.5	78.0	Ø5	min (n x Rlat,k ; 46.8/kmod)
NP15/140/300	21217906	5650502	0.46	25	140	300	1.5	98.0	Ø5	min (n x Rlat,k ; 46.8/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]
	NOB nr.	Tun / DB nr.	Weight[kg]	Qty per Box	A[mm]	B[mm]	Thickness[mm]	Round		$R_{1,k}$
								Qty	Diameter	
NP15/160/180	21593967	8977860	0.32	50	160	180	1.5	68.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/160/220	21217922	5653712	0.39	50	160	220	1.5	83.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/160/240	21593975	8977878	0.43	25	160	240	1.5	90.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/160/260	21217948	1921394	0.45	25	160	260	1.5	98.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/160/340	21218029	2686897	0.59	25	160	340	1.5	128.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/160/400	41738786	1268000	0.71	20	160	400	1.5	150.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP15/180/220	21217971	5650510	0.44	25	180	220	1.5	94.0	Ø5	min (n x Rlat,k ; 60.1/kmod)
NP15/200/220	21217989	2686996	0.49	25	200	220	1.5	105.0	Ø5	min (n x Rlat,k ; 66.8/kmod)
NP20/40/120	21218342	3779154	0.071	100	40	120	2	9.0	Ø5	min (n x Rlat,k ; 17.8/kmod)
NP20/40/160	21594007	8977902	0.094	50	40	160	2	12.0	Ø5	min (n x Rlat,k ; 17.8/kmod)
NP20/50/200	21218359	8256240	0.15	50	50	200	2	20.0	Ø5	min (n x Rlat,k ; 23.8/kmod)
NP20/60/140	21594023	8977910	0.12	50	60	140	2	18.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP20/60/200	21594114	8977928	0.176	50	60	200	2	25.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP20/60/240	21218367	8258154	0.22	50	60	240	2	30.0	Ø5	min (n x Rlat,k ; 26.7/kmod)
NP20/80/200	21594031	8977936	0.232	50	80	200	2	35.0	Ø5	min (n x Rlat,k ; 35.6/kmod)
NP20/80/240	21218185	5650346	0.29	50	80	240	2	42.0	Ø5	min (n x Rlat,k ; 35.6/kmod)
NP20/80/300	21594049	8977944	0.35	50	80	300	2	53.0	Ø5	min (n x Rlat,k ; 35.6/kmod)
NP20/100/140	21218201	7742414	0.204	50	100	140	2	32.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/200	21594056	8977951	0.3	50	100	200	2	45.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/240	21218227	5650429	0.35	50	100	240	2	54.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/260	21218235	5653779	0.38	50	100	260	2	59.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/300	21594064	8977969	0.45	25	100	300	2	68.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/400	21218250	2184331	0.6	25	100	400	2	89.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/100/500	21218268	2184349	0.75	25	100	500	2	112.0	Ø5	min (n x Rlat,k ; 44.6/kmod)
NP20/120/160	-	-	0.3	50	120	160	2	44.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/200	21218276	7742422	0.35	50	120	200	2	55.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/240	21594072	8977977	0.41	25	120	240	2	66.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/260	21218292	5653787	0.48	25	120	260	2	72.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/300	21594080	8977985	0.53	25	120	300	2	83.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/120/400	24176158	5018533	0.689	25	120	400	2	110.0	Ø5	min (n x Rlat,k ; 53.5/kmod)
NP20/140/200	-	-	0.44	25	140	200	2	65.0	Ø5	min (n x Rlat,k ; 62.4/kmod)
NP20/140/400	21594098	8977993	0.83	25	140	400	2	130.0	Ø5	min (n x Rlat,k ; 62.4/kmod)
NP20/160/300	24176141	5650130	0.69	25	160	300	2	113.0	Ø5	min (n x Rlat,k ; 71.3/kmod)
NP20/160/400	21218326	5788246	0.93	20	160	400	2	150.0	Ø5	min (n x Rlat,k ; 71.3/kmod)
NP20/200/300	21594106	8978009	0.89	20	200	300	2	143.0	Ø5	min (n x Rlat,k ; 89.1/kmod)

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:
$R_{I.k}$= min ($R_{1.st}$ / k_{mod}; R_{upper}; R_{lower})
Where:

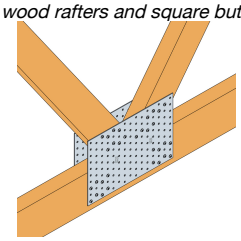
- $R_{1.st}$: the maximum characteristic value under tensile load as specified in the table.
- R_{upper}: the resistance of the group of fasteners in the upper wall
- R_{lower}: the resistance of the group of fasteners in the lower wall

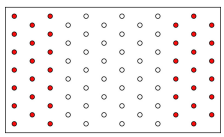
R_{upper} = $ne_{f.upper}$ x $R_{lat.k}$ R_{lower} = $n_{ef.lower}$ x $R_{lat.k}$
Where:

- $n_{ef.upper}$: 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.





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