

DESIGN CRITERIA

For Class 1 structures (domestic residences) For other structure wind loading from AS/NZS 1170/2 and related back to the wind classifications shown in tables Ceiling designed to take dead load (DL) and internal wind pressure loads, and also raking loads as a diaphragm to distribute horizontal wind loads to the bracing walls

NOTE Class 10 structure (sheds and Out buildings) can be considered as Type 1 structures under BCA Vol 1 with a reduction in their wind rating

Top hat section from 0.42 or 0.38 BTM from grade 550 steel Design loads - dead load 10 mm plasterboard plus insulation - 0.013 KPa

Ceilings to take internal wind pressures Wind load for N areas Cpn -0.3 Wu for strength ie .3 Wu + 1.25 DL downwards on ceiling for C areas Cpn .0.7 Wu for strength ie .7 Wu + 1.25 DL downwards on ceiling

For deflections (table C1 AS1170.0) 1 DL down deflection limited to span /500 2 DL down + 0.3 Ws - deflection limited span/200 (ie limited cracking in ceiling plasterboard)

Note loading from AS4055 and no increase in serviceability wind loading for C areas - presume that cracking in ceiling wall occur due to other actions

Wind pressures as given in AS4055 Also reference AS/NZS 1170.2

Beware that for a truss roof the trusses in general to be supported on the exterior walls only so there is to be clearance between from the underside of the of truss or battens of 10mm to the top plate of any internal walls to allow for this to be achieved.

Where bracing walls loads to be sliding joints as indicated in the AS1684 series to transfer horizontal wind loads from ceiling diaphragm to those walls.

I hereby certify that if the metal ceiling battens are installed as shown in this drawing they will meet the requirements of the Building code of Australia 2006 The fixing of the plasterboard is to be to the manufacturers instructions for the various applications and not covered by this certificate.

AJ Mc Donald BE MIE (AUST) NPER 3 No 83790 RPEQ 2354

AJ Mc Donald

METAL CEILING BATTENS USE FOR 450 & 600 SPACINGS FOR 450 TO 1200 SPANS FOR THE VARIOUS WIND LOADINGS FOR GLACIER CEILING BATTENS	DESIGN AMCD
ALASDAIR Mc DONALD BE MIE(AUST) Registered Professional Engineer Queensland 2354 15 MILFORD COURT EATONS HILL 4037 P O BOX 13 ALBANY CREEK 4035 TELEPHONE 07 3264 6450	SCALE As shown
	DATE 19/1/2007
	DRG No C 5489

Spacing between battens 600 Wind ratings as defined and given in AS4055 Battens to be continuous over at least 2 spans Max cantilever distance 200 mm

Wind Rating for area	Span of ceiling batten				
	450	600	900	1200	
N1	OK	OK	OK	OK	
N2	OK	OK	OK	OK	
N3	OK	OK	OK	OK	
N4	OK	OK	OK	OK	
N5	OK	OK	OK	OK	
N6	OK	OK	OK	OK	
C1	OK	OK	OK	N/A	
C2	OK	OK	OK	N/A	
C4	OK	OK	OK	N/A	
C5	OK	OK	OK	N/A	

Fixings for positions above this line both screw and nailed fixings acceptable those positions below line only screw fixings

Fixings for positions above this line both screw and nailed fixings acceptable those positions below line only screw fixings

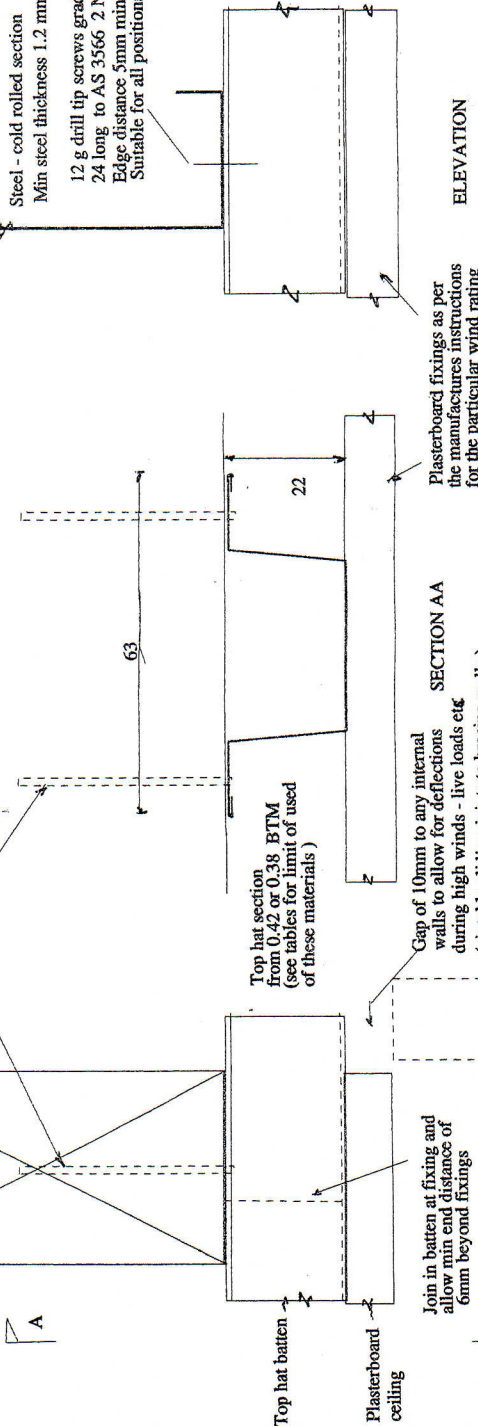
N/A this metal batten; not applicable in this application

Fixings Nails 2.5 D (galv) 35 mm long min side distance 12.5 mm - spacing 25 mm (along grain) ## Screws 2.74 D (gagc 4) 35 long min side distance 14 mm - spacing 27 mm (along grain) (screws Type 17 to AS3566) These are the min sizes of nails and screws for structural fixings given in AS 1720 (Timber Code) See tables for use (ie screws can be used in all situations - 2.5 D nails only in applications above line in the above tables) ## The use of larger diameter nails can be considered where wider timber members used and edge and end distances and spacing can be accommodated

Steel - cold rolled section Min steel thickness 1.2 mm 12 g drill tip screws grade 550 24 long to AS 3566 2 No / junction Edge distance 5mm min Suitable for all positions in above tables

Timber rafter / bottom truss chord / etc

35 mm min thickness at least joint grade JDA



ELEVATION

CONNECTION TO A TIMBER MEMBER (full size) If other fixings used then their pull out capacity to be at least equivalent to the fixings shown above

CONNECTION TO STEEL SECTION (full size)