

APPENDIX 1 – RESTRAINT EXAMPLES

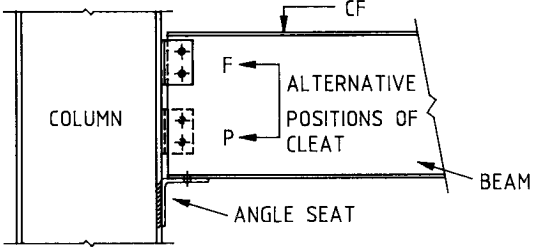
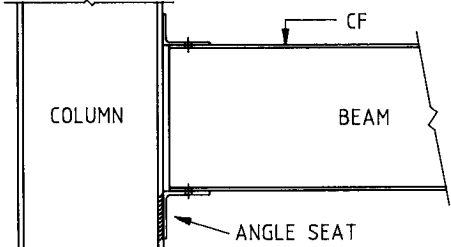
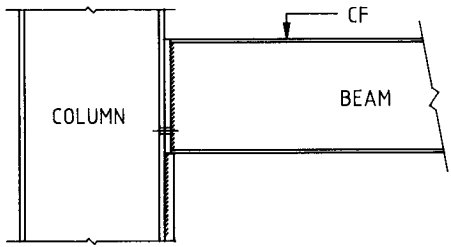
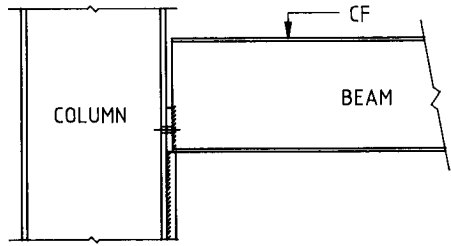
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>1. ANGLE SEAT CONNECTION CLEAT TO WEB.</p> 	<p>EITHER: F - FULL RESTRAINT TO BEAM IF CLEAT CLOSE TO CRITICAL FLANGE.</p> <p>OR: P - PARTIAL RESTRAINT TO BEAM IF CLEAT AWAY FROM CRITICAL FLANGE</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>2. ANGLE SEAT CONNECTION CLEAT TO FLANGE.</p> 	<p>F - FULL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>3. BEARING PAD CONNECTION FULL DEPTH END PLATE</p> 	<p>F - FULL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>4. BEARING PAD CONNECTION PARTIAL DEPTH END PLATE</p> 	<p>P - PARTIAL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A1 Restraint at Beam – Column Connections

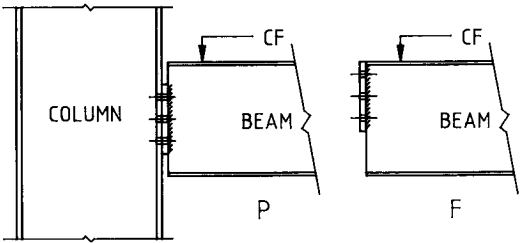
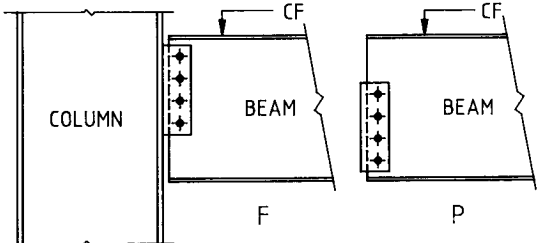
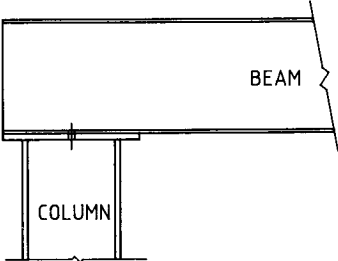
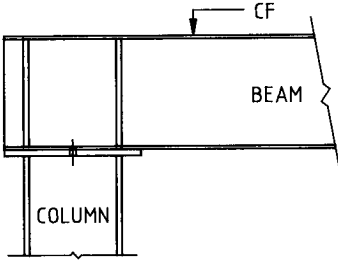
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>5. FLEXIBLE END PLATE BEAM TO COLUMN</p> 	<p>EITHER F - FULL RESTRAINT TO BEAM (END PLATE AT CF)</p> <p>OR P - PARTIAL RESTRAINT TO BEAM (END PLATE AWAY FROM CF)</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>6. ANGLE CLEAT OR WEB PLATE BEAM TO COLUMN</p> 	<p>CLEAT OR WEB PLATE HIGH AS CLOSE AS PRACTICAL TO CF</p> <p>F - FULL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CLEAT OR WEB PLATE LOW ON BEAM</p> <p>P - PARTIAL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>7. BEAM CONNECTED TO COLUMN THROUGH CAP PLATE. NO LOAD BEARING STIFFENERS.</p> 	<p>P - PARTIAL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>8. BEAM CONNECTED TO COLUMN THROUGH CAP PLATE. LOAD BEARING STIFFENERS.</p> 	<p>F - FULL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A2 Restraint at Beam – Column Connections

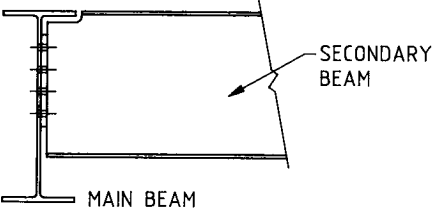
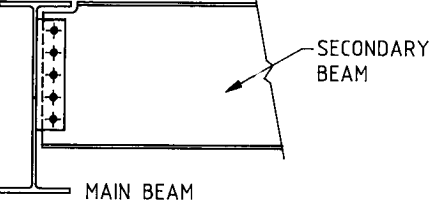
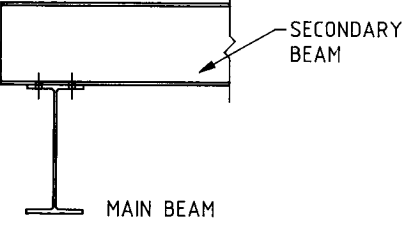
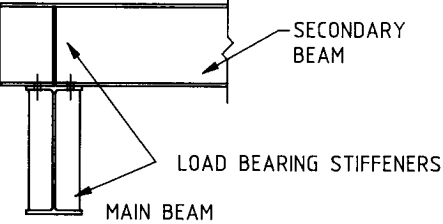
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>9. FLEXIBLE END PLATE BEAM TO BEAM</p> 	<p>FOR MAIN BEAM:- CF EITHER FLANGE</p> <p>P - PARTIAL RESTRAINT TO MAIN BEAM FROM SECONDARY BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR SECONDARY BEAM:- SINGLE WEB COPE CF EITHER FLANGE</p> <p>P - PARTIAL RESTRAINT TO SECONDARY BEAM FROM MAIN BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>10. ANGLE CLEAT OR WEB PLATE BEAM TO BEAM</p> 	<p>FOR MAIN BEAM:- CF EITHER FLANGE</p> <p>P - PARTIAL RESTRAINT TO MAIN BEAM FROM SECONDARY BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR SECONDARY BEAM:- SINGLE WEB COPE CF EITHER FLANGE</p> <p>P - PARTIAL RESTRAINT TO SECONDARY BEAM FROM MAIN BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>11. SECONDARY BEAM SEATED ON MAIN BEAM NO LOAD BEARING STIFFENERS</p> 	<p>FOR SECONDARY BEAM:-</p> <p>CF - TOP FLANGE ≡ RESTRAINT TYPE = P</p> <p>CF - BOTTOM FLANGE ≡ RESTRAINT TYPE = F</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR MAIN BEAM:-</p> <p>CF - TOP FLANGE ≡ RESTRAINT TYPE = F</p> <p>CF - BOTTOM FLANGE ≡ RESTRAINT TYPE = P</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>12. SECONDARY BEAM SEATED ON MAIN BEAM LOAD BEARING STIFFENERS</p> 	<p>FOR SECONDARY BEAM:-</p> <p>F - FULL RESTRAINT</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR MAIN BEAM:-</p> <p>CF - TOP FLANGE ≡ RESTRAINT TYPE = F</p> <p>CF - BOTTOM FLANGE ≡ RESTRAINT TYPE = F</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100</p> <p>CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED</p> <p>P - PARTIALLY RESTRAINED</p> <p>L - LATERALLY RESTRAINED</p> <p>U - UNRESTRAINED</p>	

Fig. A3 Restraint at Beam – Beam Connections

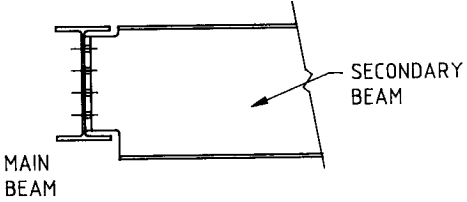
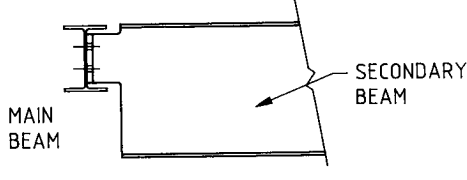
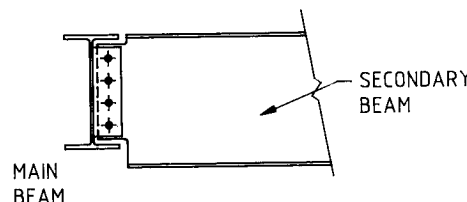
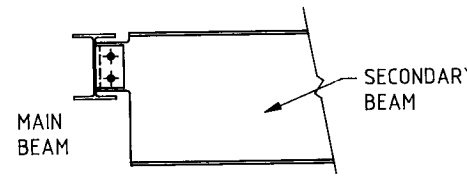
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>13. FLEXIBLE END PLATE DOUBLE WEB COPE - SMALL COPEs</p> 	<p>FOR MAIN BEAM:- CF EITHER FLANGE P - PARTIAL RESTRAINT TO MAIN BEAM FROM SECONDARY BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR SECONDARY BEAM:- CF EITHER FLANGE P - PARTIAL RESTRAINT TO SECONDARY BEAM FROM MAIN BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>14. FLEXIBLE END PLATE DOUBLE WEB COPE - LARGE COPE AT BOTTOM</p> 	<p>FOR MAIN BEAM:- AS CASE 13 ABOVE</p> <p>FOR SECONDARY BEAM:- CF - TOP FLANGE ≡ RESTRAINT TYPE = P CF - BOTTOM FLANGE ≡ RESTRAINT TYPE = U NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>15. ANGLE CLEAT OR WEB PLATE DOUBLE WEB COPE - SMALL COPEs</p> 	<p>FOR MAIN BEAM:- CF EITHER FLANGE P - PARTIAL RESTRAINT TO MAIN BEAM FROM SECONDARY BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR SECONDARY BEAM:- CF EITHER FLANGE P - PARTIAL RESTRAINT TO SECONDARY BEAM FROM MAIN BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>16. ANGLE CLEAT OR WEB PLATE DOUBLE WEB COPE - LARGE COPE AT BOTTOM</p> 	<p>FOR MAIN BEAM:- AS CASE 13 ABOVE</p> <p>FOR SECONDARY BEAM:- CF - TOP FLANGE ≡ RESTRAINT TYPE = P CF - BOTTOM FLANGE ≡ RESTRAINT TYPE = U NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED P - PARTIALLY RESTRAINED</p> <p>L - LATERALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A4 Restraint at Beam – Beam Connections

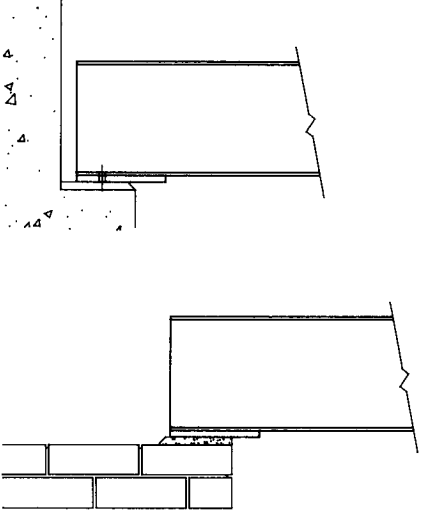
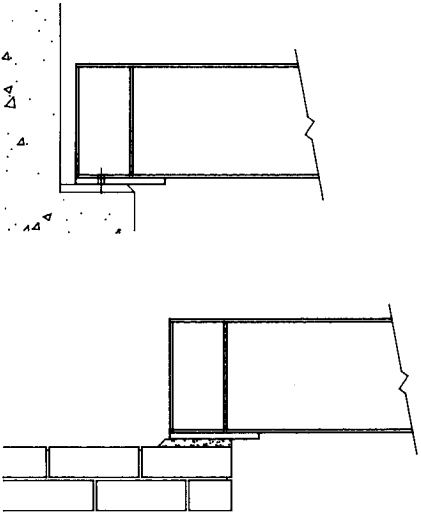
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>17. SIMPLE SEAT CONNECTIONS NO LOAD BEARING STIFFENERS</p> 	<p>P - PARTIAL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>18. SIMPLE SEAT CONNECTIONS LOAD BEARING STIFFENERS</p> 	<p>F - FULL RESTRAINT TO BEAM</p> <p>NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED P - PARTIALLY RESTRAINED</p> <p>L - LATERALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A5 Restraint at Beam Seats

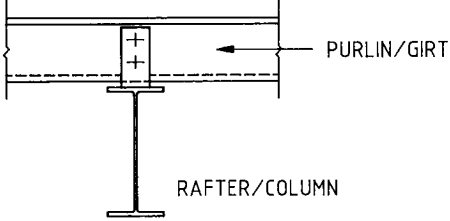
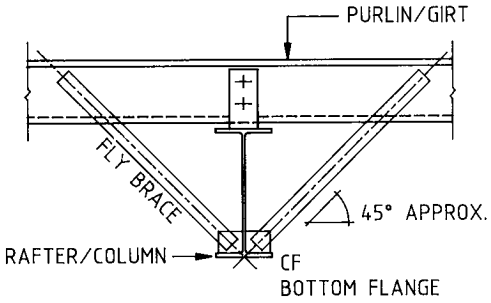
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>19. PURLIN/RAFTER OR GIRT/COLUMN CONNECTION. NO FLY BRACE PRESENT.</p>  <p>PURLIN/GIRT</p> <p>RAFTER/COLUMN</p>	<p>CF - TOP FLANGE</p> <p>L - LATERAL RESTRAINT TO RAFTER/COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CF - BOTTOM FLANGE</p> <p>U - RAFTER/COLUMN UNRESTRAINED</p>
<p>20. PURLIN/RAFTER OR GIRT/COLUMN CONNECTION. FLY BRACE PRESENT.</p>  <p>PURLIN/GIRT</p> <p>FLY BRACE</p> <p>RAFTER/COLUMN</p> <p>CF BOTTOM FLANGE</p> <p>45° APPROX.</p>	<p>FLY BRACE BOLTED TO UNLAPPED PURLIN/GIRT:-</p> <p>P - PARTIAL RESTRAINT TO MEMBER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FLY BRACE BOLTED TO LAPPED PURLIN/GIRT:-</p> <p>F - FULL RESTRAINT TO MEMBER NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100</p> <p>CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED</p> <p>P - PARTIALLY RESTRAINED</p> <p>L - LATERALLY RESTRAINED</p> <p>U - UNRESTRAINED</p>	

Fig. A6 Restraint at Purlin and Girt Connections

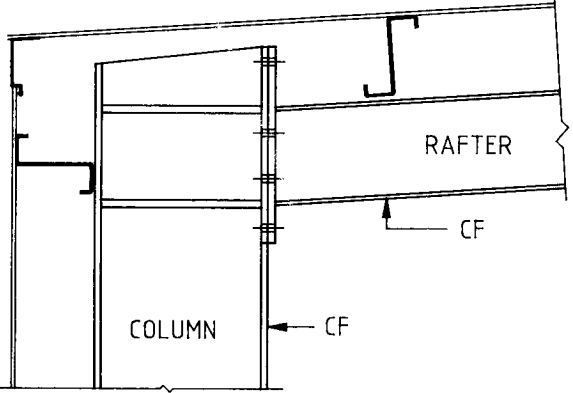
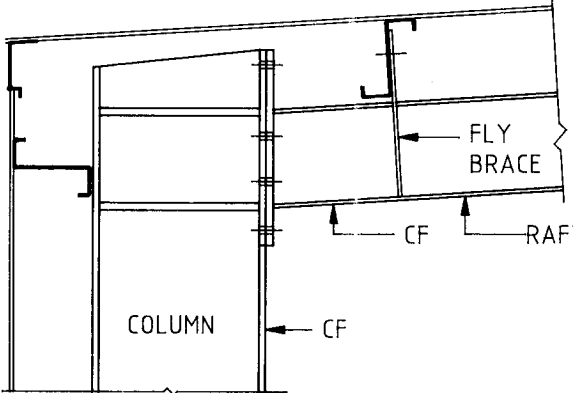
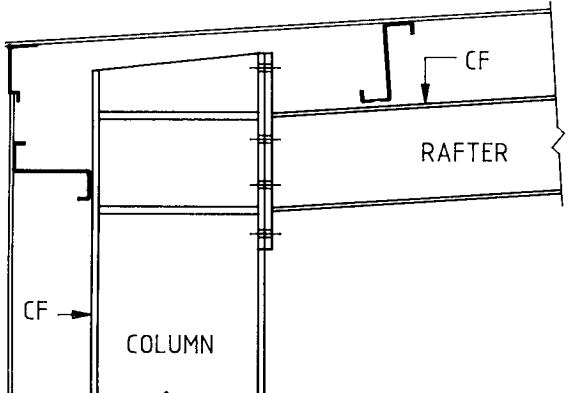
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>21 PORTAL FRAME KNEE CONNECTION NO FLY BRACING TO RAFTER</p> 	<p>CRITICAL FLANGE ON INSIDE FLANGES:-</p> <p>P - PARTIAL RESTRAINT TO RAFTER P - PARTIAL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CLASSIFICATION APPLIES IRRESPECTIVE OF WHETHER COLUMN STIFFENERS ARE PRESENT OR NOT.</p>
<p>22 PORTAL FRAME KNEE CONNECTION FLY BRACING TO RAFTER</p> 	<p>CRITICAL FLANGE ON INSIDE FLANGES:-</p> <p>F - FULL RESTRAINT TO RAFTER P - PARTIAL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CLASSIFICATION APPLIES IRRESPECTIVE OF WHETHER COLUMN STIFFENERS ARE PRESENT OR NOT.</p>
<p>23 PORTAL FRAME KNEE CONNECTION</p> 	<p>CRITICAL FLANGE ON OUTSIDE FLANGES:-</p> <p>F - FULL RESTRAINT TO RAFTER F - FULL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CLASSIFICATION APPLIES IRRESPECTIVE OF WHETHER COLUMN STIFFENERS ARE PRESENT OR NOT.</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A7 Restraint at Knee Joints in Portal Frames

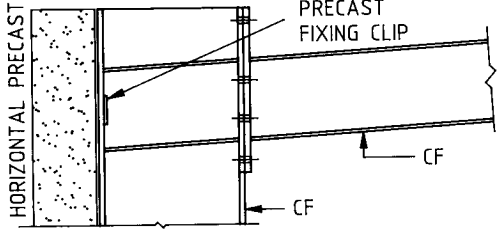
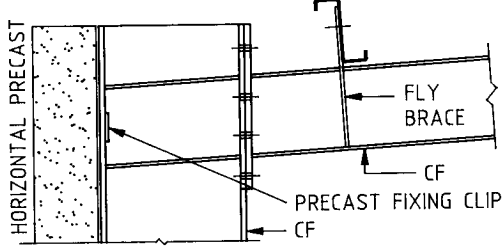
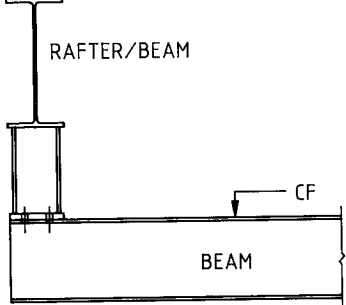
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>24 PORTAL FRAME KNEE CONNECTION PRECAST WALL</p> 	<p>CRITICAL FLANGE ON INSIDE:-</p> <p>F - FULL RESTRAINT TO RAFTER P - PARTIAL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CLASSIFICATION APPLIES IRRESPECTIVE OF WHETHER COLUMN STIFFENERS ARE PRESENT OR NOT.</p>
<p>25 PORTAL FRAME KNEE CONNECTION PRECAST WALL. FLY BRACE TO RAFTER</p> 	<p>CRITICAL FLANGE ON INSIDE:-</p> <p>F - FULL RESTRAINT TO RAFTER P - PARTIAL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CLASSIFICATION APPLIES IRRESPECTIVE OF WHETHER COLUMN STIFFENERS ARE PRESENT OR NOT.</p>
<p>26. BEAM CONNECTION TO BEAM/RAFTER FROM HANGER STUB.</p> 	<p>FOR CONNECTED BEAM:-</p> <p>P - PARTIAL RESTRAINT TO BEAM NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR RAFTER/BEAM, CF - TOP FLANGE</p> <p>U - UNRESTRAINED BY CONNECTED BEAM NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR RAFTER/BEAM, CF - BOTTOM FLANGE</p> <p>P - PARTIAL RESTRAINT FROM CONNECTED BEAM NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A8 Restraint at Knee Joints in Portal Frames and at Hanger

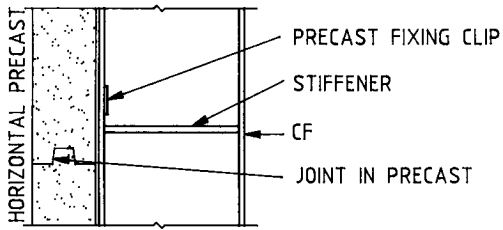
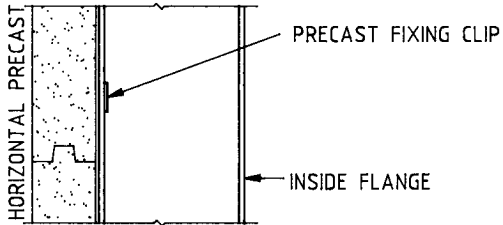
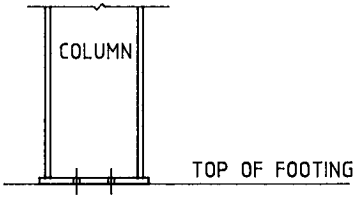
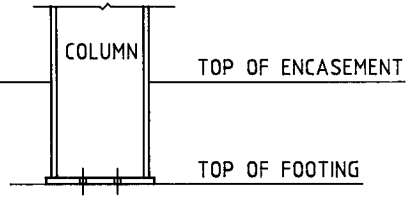
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>27 COLUMN WITH PRECAST WALL CLIP CLOSE TO STIFFENERS</p> 	<p>CRITICAL FLANGE ON INSIDE:-</p> <p>F - FULL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>28 COLUMN WITH PRECAST WALL NO STIFFENER</p> 	<p>CRITICAL FLANGE ON INSIDE:-</p> <p>U - SECTION UNRESTRAINED NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CRITICAL FLANGE ON OUTSIDE:-</p> <p>F - FULL RESTRAINT TO COLUMN AT CLIP BECOMES CONTINUOUS RESTRAINT TO FLANGE, ASSUMING PRECAST PANELS 1200 WIDE, 2 CLIPS PER PANEL. NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>29 COLUMN BASE PLATE COLUMN BASE NOT CONCRETE ENCASED</p> 	<p>F - FULL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>30 COLUMN BASE PLATE COLUMN BASE CONCRETE ENCASED</p> 	<p>F - FULL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A9 Restraint at Columns

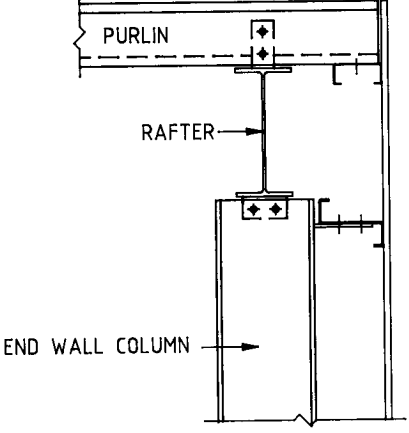
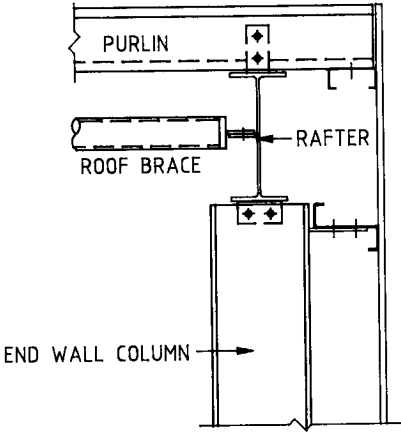
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>31 END WALL COLUMN TO RAFTER CONNECTION. NO ROOF BRACE.</p> 	<p>FOR RAFTER:-</p> <p>CRITICAL FLANGE AT TOP FLANGE L - LATERAL RESTRAINT TO RAFTER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CRITICAL FLANGE AT BOTTOM FLANGE U - UNRESTRAINED BY CONNECTED END WALL COLUMN</p> <p>FOR END WALL COLUMN:-</p> <p>P - PARTIAL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>ALSO SEE CASE 20 WHEN FLY BRACE FROM GIRT PRESENT</p>
<p>32 END WALL COLUMN TO RAFTER CONNECTION. ROOF BRACE PRESENT</p> 	<p>FOR RAFTER:-</p> <p>CRITICAL FLANGE AT TOP FLANGE F - FULL RESTRAINT TO RAFTER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CRITICAL FLANGE AT BOTTOM FLANGE P - PARTIAL RESTRAINT TO RAFTER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR END WALL COLUMN:-</p> <p>P OR L - PARTIAL OR LATERAL RESTRAINT IF CLEAT NOT AS CLOSE AS PRACTICAL TO CF F - FULL RESTRAINT IF CLEAT AS CLOSE AS POSSIBLE TO CF NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>ALSO SEE CASE 20 WHEN FLY BRACE FROM GIRT PRESENT</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A10 Restraint at End Wall Columns

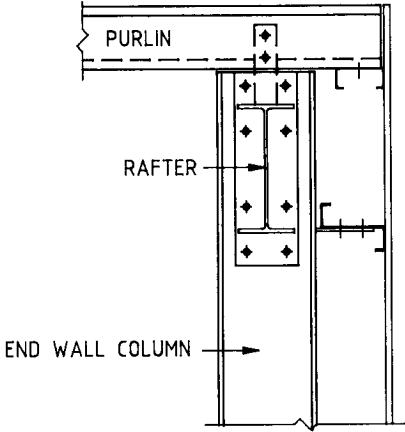
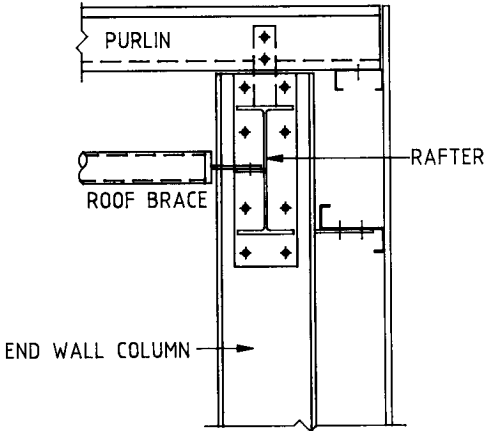
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>33 END WALL COLUMN TO RAFTER CONNECTION USING MOMENT END PLATE NO ROOF BRACE.</p> 	<p>FOR RAFTER</p> <p>CRITICAL FLANGE AT TOP FLANGE L - LATERAL RESTRAINT TO RAFTER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CRITICAL FLANGE AT BOTTOM FLANGE U - UNRESTRAINED BY CONNECTED END WALL COLUMN</p> <p>FOR END WALL COLUMN</p> <p>P - PARTIAL RESTRAINT TO COLUMN NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>ALSO SEE CASE 20 WHEN FLY BRACE FROM GIRT PRESENT</p>
<p>34 END WALL COLUMN TO RAFTER CONNECTION USING MOMENT END PLATE. ROOF BRACE PRESENT.</p> 	<p>FOR RAFTER</p> <p>CRITICAL FLANGE AT TOP FLANGE F - FULL RESTRAINT TO RAFTER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>CRITICAL FLANGE AT BOTTOM FLANGE F - FULL RESTRAINT TO RAFTER NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>FOR END WALL COLUMN</p> <p>P OR L - PARTIAL OR LATERAL RESTRAINT IF CLEAT NOT AS CLOSE AS PRACTICAL TO CF F - FULL RESTRAINT IF CLEAT AS CLOSE AS POSSIBLE TO CF NO - RESTRAINT AGAINST LATERAL ROTATION</p> <p>ALSO SEE CASE 20 WHEN FLY BRACE FROM GIRT PRESENT</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A11 Restraint at End Wall Columns

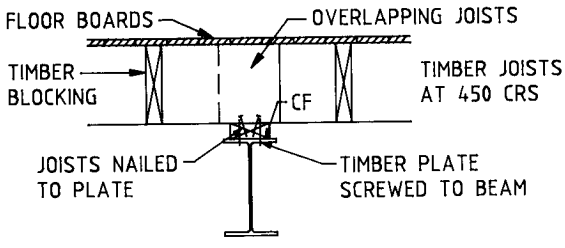
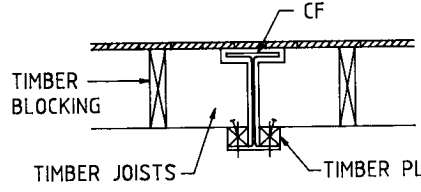
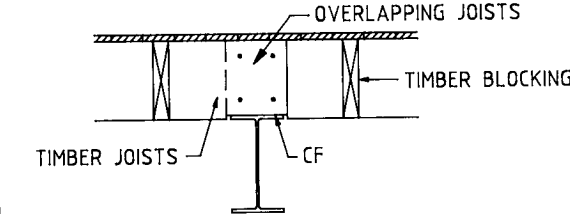
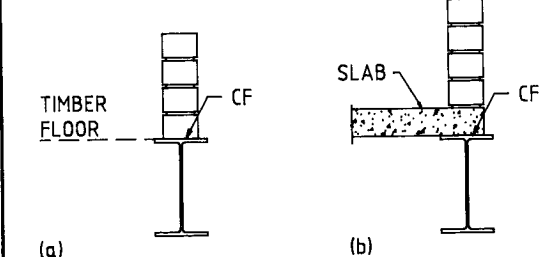
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>35 BEAM SUPPORTING A TIMBER FLOOR</p> <p>(a) TOP FLANGE BEARING</p> 	<p>BEAM MAY BE CONSIDERED TO HAVE LATERAL RESTRAINT (L) AT THE JOISTS PROVIDED SUFFICIENT FRICTIONAL FORCE CAN BE DEVELOPED OR PROVIDED THERE IS SUFFICIENT STRENGTH IN THE CONNECTORS BETWEEN THE STEEL BEAM AND THE TIMBER JOISTS</p> <p>WHEN RELYING ON FRICTION FORCE, A FRICTION COEFFICIENT OF 0.1 IS SUGGESTED IN REFERENCE [7].</p> <p>FIXING THE TIMBER JOISTS DIRECT TO STEEL BEAM WITH PINS OR SCREWS AT NOT LESS THAN 1.0 METRE CENTRES IS SUGGESTED IN REFERENCE [7].</p>
<p>(b) BOTTOM FLANGE BEARING</p> 	<p>IN THIS CASE, THE TOP FLANGE MAY BE RESTRAINED AGAINST LATERAL DEFLECTION BY THE TIMBER JOISTS AND THE LOAD HAS A STABILIZING EFFECT. EACH TIMBER JOIST FRAMING IN CAN BE CONSIDERED TO PROVIDE A FULL RESTRAINT (F) TO THE STEEL BEAM IF CLOSE FITTED.</p>
<p>(c) TOP FLANGE BEARING</p> 	<p>IN THIS CASE, THE TOP FLANGE MAY BE RESTRAINED AGAINST LATERAL DEFLECTION BY CLOSE FITTING NOTCHES. EACH TIMBER JOIST CAN BE CONSIDERED TO PROVIDE LATERAL RESTRAINT (L) TO THE STEEL BEAM. IF THERE IS A POSITIVE CONNECTION OR SUFFICIENT FRICTION. STEEL CLEATS ARE RECOMMENDED IN REFERENCE [7].</p>
<p>36 BEAM SUPPORTING A MASONRY WALL</p>  <p>(a) (b)</p>	<p>(a) BRICKWORK IS ASSUMED NOT TO PROVIDE CONTINUOUS LATERAL RESTRAINT U - SECTION UNRESTRAINED</p> <p>(b) CONTINUOUS LATERAL RESTRAINT MAY BE PROVIDED BY NON-COMPOSITE CONCRETE SLAB. REFER TO EXAMPLE 37b</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE</p> <p>F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A12 Restraint at Timber Floors and Brick Walls

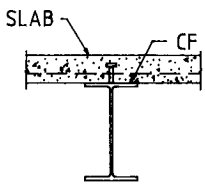
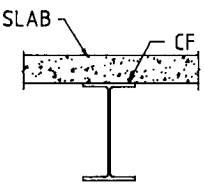
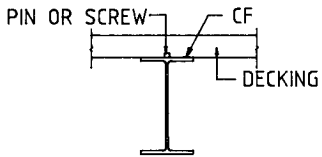
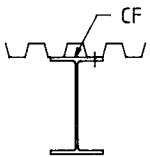
CONNECTION DETAIL & DESCRIPTION	RESTRAINT CLASSIFICATION
<p>37 BEAM SUPPORTING CONCRETE SLAB</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>(a) COMPOSITE</p> </div> <div style="text-align: center;">  <p>(b) NON-COMPOSITE</p> </div> </div>	<p>(a) COMPOSITE ACTION DUE TO PRESENCE OF SHEAR CONNECTORS. CONTINUOUS LATERAL RESTRAINT PROVIDED BOTH ENDS OF BEAM ARE FULLY (F) OR PARTIALLY (P) RESTRAINED</p> <p>(b) NON-COMPOSITE CONTINUOUS LATERAL RESTRAINT CAN ONLY BE PROVIDED BY FRICTION BETWEEN SLAB AND CRITICAL FLANGE (CF). FRICTION COEFFICIENT IS SUGGESTED TO BE TAKEN AS:- (REFERENCE [7]) 0.3 FOR UNPAINTED TOP FLANGE 0.1 FOR PAINTED TOP FLANGE</p> <p>CONTINUOUS LATERAL RESTRAINT ALSO REQUIRES ENDS OF BEAM TO BE FULLY (F) OR PARTIALLY (P) RESTRAINED.</p>
<p>38 BEAM SUPPORTING STEEL DECKING OR ROOF SHEETING.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>(a) RIBS PERPENDICULAR TO BEAM</p> </div> <div style="text-align: center;">  <p>(b) RIBS PARALLEL TO BEAM</p> </div> </div>	<p>GENERALLY, CONTINUOUS LATERAL RESTRAINT CANNOT BE ASSUMED TO BE PROVIDED. U - SECTION UNRESTRAINED</p> <p>HOWEVER, FOR CASE (a), A METHOD OF DETERMINING IF SUFFICIENT IN-PLANE STIFFNESS EXISTS IN THE DECKING TO PROVIDE CONTINUOUS LATERAL RESTRAINT, IS SUGGESTED IN REFERENCE [7].</p>
<p>NOTATION: CLAUSES 5.5 & 5.4.2 OF AS 4100 CF - CRITICAL FLANGE F - FULLY RESTRAINED L - LATERALLY RESTRAINED P - PARTIALLY RESTRAINED U - UNRESTRAINED</p>	

Fig. A13 Restraint at Concrete Slabs and Steel Decking