

KNAUF

Fireboard Frameless Encasement System



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Build on us.



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Introduction

Passive Fire Protection

Passive Fire Protection is a crucial element to any building’s overall fire strategy. The purpose of PFP is to slow or prevent the spread of fire within the building using fire protection products and systems.

Fire protection for structural steel is essential to maintain safety, structural performance and code compliance in the event of a fire. It buys critical time, protects lives and helps preserve property.

Knauf Fireboard Frameless Encasement System has been designed to protect structural steel (Universal Steel Beams and Universal Steel Columns) for loadbearing capacity measured in minutes. Knauf Fireboard is a glass reinforced gypsum board (GRG) and can be used in concealed and viewed spaces.



Figure 1: Representation of Knauf Fireboard Frameless Encasement System



Redesigned For Performance, Built For Confidence

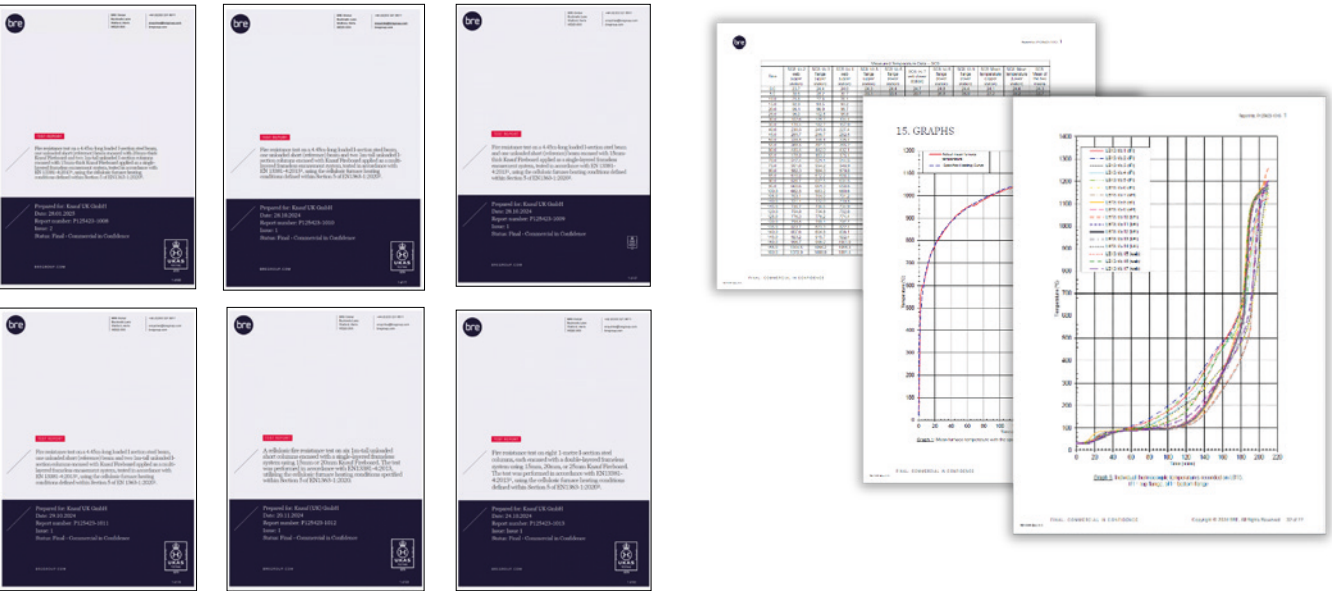
The re-designed Knauf Frameless Encasement System is backed and supported by full-scale system testing to EN 13381-4 at a UKAS-accredited test centre. The revised, cutting-edge solution delivers up to date testing information, expanded AV (Hp/A) tables and new simplified construction details. Designed for ease of installation, featuring fewer components for faster, simpler assembly. Following an extensive test program completed in 2024, Knauf Fireboard Frameless Encasement System has been reintroduced to provide continuous support for fire protection for design and completion for the built environment. This document supersedes our Knauf Frameless Encasement Solutions for Structural Steel – Fire Protection brochure, dated 2022.



Figure 2: Knauf Frameless Encasement Solutions for Fire Structural Steel – Fire Protection brochure



Figure 3: Photos of Knauf Fireboard being installed at a UKAS-accredited test centre



Figures 4: Full comprehensive fire testing reports

Key Features



Figure 5: Representation of Knauf Fireboard Frameless Encasement System

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The system provides a range of fire protection performance ranging from 30 to 120 minutes loadbearing capacity to a wide range of universal steel beams (UB) and universal steel columns (UC)
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Non-combustible board in accordance with EN 13501-1 achieving A1 fire classification
- 

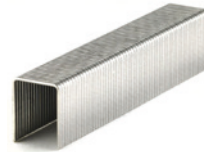
Simplified installation steps to improve installation time

System Components

Key components

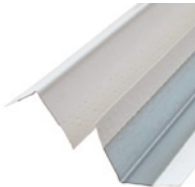


Knauf Fireboard
Fleece lined, glass reinforced gypsum (GRG) board manufactured in accordance with EN 15283-1.
Available in 15mm, 20mm and 25mm thicknesses.



Staples (available from others)
Steel Staples manufactured in accordance with BS EN 14566
Steel wire diameter ≥ 1.6mm gauge, 1.34mm diameter, CH point, EG 3 Finish.

Auxiliary components



Knauf Dallas B1 External Bead
Paper faced corner bead applied to external corners of Knauf Fireboard.



Knauf Intumescent and Acoustic Mastic
Water based, acrylic fire-resistant sealer, designed specifically for linear joint sealing.



Knauf Cavity Dowel Hartmut
Mechanical fixing used to connect Knauf partitions and linings, to Knauf Fireboard Frameless Encasement System. (Fixing includes a M5 x 60mm screw).

Knauf Powdered Jointing & Tapes*



*For more information contact Technical Services via email:technical-uk@knauf.com or call 0800 521050 (option 2)

A Guide to Specifying Knauf Fireboard

Knauf Fireboard Frameless Encasement System can be used to protect load-bearing universal steel beams and universal steel columns for up to 120 minutes load-bearing capacity which has been tested in accordance with EN 13881-4. The system comprises of Knauf Fireboard a fleece lined, glass reinforced gypsum board, fixed using steel staples.

To help specify the required thickness and number of layers of Knauf Fireboard for universal steel beams (UB or UKB) and universal steel columns (UC or UKC) with your required fire protection period (minutes) it is important to obtain the following:

- 1. The structural use and description of members and critical temperature of sections.
- 2. A/V or Hp/A Factor

The structural use and description of members and critical temperature of sections: Within ASFP Yellow Book – Fire Protection for structural steel in buildings Volume 1, 6th Edition (2025), table b.1 provides default limiting and critical temperatures for standard sections manufactured from carbon steel in accordance with EN 1993 and EN 1994. They have been compiled based upon structural loading limitations to utilisation (in fire) values of no greater than $\mu_0 = 0.6$ for all scenarios.

Table B.1 - Default critical temperatures*

Simple Description	Structural Use / Description of Member	Default critical temperature (°C)
3-sided beam	'I' section and Hollow section beams in bending supporting concrete slabs or composite slabs	580
4-sided beam	'I' section and Hollow section beams in bending not supporting concrete slabs	550
Hangers and tension braces	Members in tension only of any shape	550
Column (including Hollow Columns), trusses and other bracings	Compression members of any shape (*)	500

(*) Truss / bracing members are typically in tension but can also be under compression, dependent upon the load path. Therefore, the conservative compression member temperature is adopted. As per the recommendations of ASFP, Designers should be aware that Table NA.1 in the UK National Annex for EN 1993-1-2 may also be used to determine limiting steel temperatures for structural members with respect to their utilisation in fire and for compression members, their non-dimensional slenderness ratio.

Note 1: for other steel cases, please consult ASFP Yellow Book- Fire Protection for structural steel in buildings Volume 1, 6th Edition.

Note 2: Critical temperature of all sections should be fully evaluated by a detailed engineering calculation conducted by a competent person.

The A/V or Hp/A Factor: The rate of increase in temperature of a steel cross-section is determined by the ratio of the heated surface area (A) to the volume (V). This ratio, A/V, has units of m^{-1} and is known as the ‘Section Factor’. Members with low section factors will heat up more slowly. In the UK, the term Hp/A has been used for many years to denote the section factor, in the European fire test standards the section factor is referred to as A/V. It should be noted that the terms A/V and Hp/A have very similar meaning.

By obtaining the structural use and description of member, with detailed understanding of size, mass, and dimensions of member the A/V or Hp/A Factor can be found. Specific to the use of **Knauf Fireboard Frameless Encasement System** to encapsulate UK Beams and UK Columns, refer to Table D.2 – UK Beams (UKB) dimensions to BS4 Part 1: 2005 and Table D.3 UK Columns (UKC) dimensions to BS4 Part 1:2005.

Table A.2 UK Beams (UKB) Dimensions to BS4 Part 1:2005								Section factor A/V(Hp/A)			
Designation		Depth of section D mm	Width of section B mm	Thickness		Area of section cm ²	Profile		Box		
Serial size	Mass per metre			Web t	Flange T		3 sides	4 sides	3 sides	4 sides	
mm	kg	mm	mm	mm	mm	cm ²	m ⁻¹	m ⁻¹	m ⁻¹	m ⁻¹	
1016 x 305	487	1036.1	308.5	30.0	54.1	619.89	45	50	40	45	
	438	1025.9	305.4	26.9	49.0	556.62	50	55	40	50	
	393	1016.0	303.0	24.4	43.9	500.24	55	65	45	55	
	349	1008.1	302.0	21.1	40.0	445.15	65	70	50	60	
	314	1000.0	300.0	19.1	35.9	400.41	70	80	55	65	
	272	990.1	300.0	16.5	31.0	346.86	80	90	65	75	
914 x 419	249	980.2	300.0	16.5	26.0	316.88	90	95	70	80	
	222	970.3	300.0	16.0	21.1	282.82	95	110	80	90	
	388	921.0	420.5	21.4	36.6	494.22	60	70	45	55	
	343	911.8	418.5	19.4	32.0	437.30	70	80	50	60	
	289	926.6	307.7	19.5	32.0	368.27	75	80	60	65	
	253	918.4	305.5	17.3	27.9	322.83	85	95	65	75	
914 x 305	224	910.4	304.1	15.9	23.9	285.64	95	105	75	85	
	201	903.0	303.3	15.1	20.2	255.92	105	115	80	95	
	226	850.9	293.8	16.1	26.8	288.56	85	100	70	80	
	194	840.7	292.4	14.7	21.7	246.82	100	115	80	90	
	176	834.9	291.7	14.0	18.8	224.02	110	125	90	100	
	197	769.8	268.0	15.6	25.4	250.64	90	100	70	85	
762 x 267	173	762.2	266.7	14.3	21.6	220.37	105	115	80	95	
	147	754.0	265.2	12.8	17.5	187.19	120	135	95	110	
	134	750.0	264.4	12.0	15.5	170.58	130	145	105	120	
	170	692.9	255.8	14.5	23.7	216.83	95	110	75	90	
	152	687.5	254.5	13.2	21.0	194.08	105	120	85	95	
	140	683.5	253.7	12.4	19.0	178.43	115	130	90	105	
686 x 254	125	677.9	253.0	11.7	16.2	159.48	130	145	100	115	
	238	635.8	311.4	18.4	31.4	303.33	70	80	50	60	
	179	620.2	307.1	14.1	23.6	228.08	90	105	70	80	
	149	612.4	304.8	11.8	19.7	190.04	110	125	80	95	
	140	617.2	230.2	13.1	22.1	178.19	105	120	80	95	
	125	612.2	229.0	11.9	19.6	159.34	115	130	90	105	
610 x 229	113	607.6	228.2	11.1	17.3	143.94	130	145	100	115	
	101	602.6	227.6	10.5	14.8	128.92	145	160	110	130	
	100	607.4	179.2	11.3	17.2	128.00	135	150	110	125	
	92	603.0	178.8	10.9	15.0	117.00	145	160	120	135	
	82	598.6	177.9	10.0	12.8	104.00	160	180	130	150	
	273	577.1	320.2	21.1	37.6	348.00	60	70	40	50	
533 x 312	219	560.3	317.4	18.3	29.2	279.00	70	85	50	65	
	182	550.7	314.5	15.2	24.4	231.00	85	100	60	75	
	151	542.5	312.0	12.7	20.3	192.00	105	120	75	90	
	138	549.1	213.9	14.7	23.6	176.00	95	110	75	85	
	122	544.5	211.9	12.7	21.3	155.39	110	120	85	95	
	109	539.5	210.8	11.6	18.8	138.86	120	135	95	110	
533 x 210	101	536.7	210.0	10.8	17.4	128.67	130	145	100	115	
	92	533.1	209.3	10.1	15.6	117.38	140	160	110	125	
	82	528.3	208.8	9.6	13.2	104.69	155	175	120	140	
	85	534.9	166.5	10.3	16.5	108.00	140	155	115	130	
	75	529.1	165.9	9.7	13.6	95.20	160	175	130	145	
	66	524.7	165.1	8.9	11.4	83.70	180	200	145	165	
457 x 191	161	492.0	199.4	18.0	32.0	206.00	75	85	60	65	
	133	480.6	196.7	15.3	26.3	170.00	90	100	70	80	
	106	469.2	194.0	12.6	20.6	135.00	110	125	85	100	
	98	467.2	192.8	11.4	19.6	125.26	120	135	90	105	
	89	463.4	191.9	10.5	17.7	113.76	130	145	100	115	
	82	460.0	191.3	9.9	16.0	104.48	140	160	105	125	
457 x 152	74	457.0	190.4	9.0	14.5	94.63	155	175	115	135	
	67	453.4	189.9	8.5	12.7	85.51	170	190	130	150	

Table A.2 UK Beams (UKB) Dimensions to BS4 Part 1:2005							Section factor A/V(Hp/A)			
Designation		Depth of section D	Width of section B	Thickness		Area of section	Profile		Box	
Serial size	Mass per metre			Web t	Flange T		3 sides	4 sides	3 sides	4 sides
mm	kg	mm	mm	mm	mm	cm ²	m ⁻¹	m ⁻¹	m ⁻¹	m ⁻¹
457 x 152	82	465.8	155.3	10.5	18.9	104.53	130	145	105	120
	74	462.0	154.4	9.6	17.0	94.48	145	160	115	130
	67	458.0	153.8	9.0	15.0	85.55	155	175	125	145
	60	454.6	152.9	8.1	13.3	76.23	175	195	140	160
	52	449.8	152.4	7.6	10.9	66.64	200	220	160	180
406 x 178	85	417.2	181.9	10.9	18.2	109.00	125	140	95	110
	74	412.8	179.5	9.5	16.0	94.51	140	160	105	125
	67	409.4	178.8	8.8	14.3	85.54	155	175	115	140
	60	406.4	177.9	7.9	12.8	76.52	170	195	130	155
	54	402.6	177.7	7.7	10.9	68.95	190	215	145	170
406 x 140	53	406.6	143.3	7.9	12.9	67.90	180	200	140	160
	46	403.2	142.2	6.8	11.2	58.64	205	230	160	185
	39	398.0	141.8	6.4	8.6	49.65	240	270	190	215
356 x 171	67	363.4	178.1	9.1	15.7	85.49	140	160	105	125
	57	358.0	172.2	8.1	13.0	72.55	165	190	120	145
	51	355.0	171.5	7.4	11.5	64.91	185	210	135	160
356 x 127	45	351.4	171.1	7.0	9.7	57.33	205	235	150	180
	39	353.4	126.0	6.6	10.7	49.77	210	235	165	195
	33	349.0	125.4	6.0	8.5	42.13	250	280	195	225
305 x 165	54	310.4	166.9	7.9	13.7	68.77	160	185	115	140
	46	306.6	165.7	6.7	11.8	58.75	185	210	135	160
	40	303.4	165.0	6.0	10.2	51.32	210	240	150	185
305 x 127	48	311.0	125.3	9.0	14.0	61.23	160	180	120	145
	42	307.2	124.3	8.0	12.1	53.40	180	200	140	160
	37	304.4	123.4	7.1	10.7	47.18	200	225	155	180
305 x 102	33	312.7	102.4	6.6	10.8	41.83	215	240	175	200
	28	308.7	101.8	6.0	8.8	35.88	250	280	200	230
	25	305.1	101.6	5.8	7.0	31.60	280	315	225	255
254 x 146	43	259.6	147.3	7.2	12.7	54.77	170	195	120	150
	37	256.0	146.4	6.3	10.9	47.16	195	225	140	170
	31	251.4	146.1	6.0	8.6	39.68	230	270	165	200
254 x 102	28	260.4	102.2	6.3	10.0	36.08	220	250	175	200
	25	257.2	101.9	6.0	8.4	32.04	250	280	190	225
	22	254.0	101.6	5.7	6.8	28.02	280	320	220	255
203 x 133	30	206.8	133.9	6.4	9.6	38.21	205	240	145	180
	25	203.2	133.2	5.7	7.8	31.97	245	285	170	210
203 x 102	23	203.2	101.8	5.4	9.3	29.40	235	270	175	205
102 178 x 102	19	177.8	101.2	4.8	7.9	24.26	260	305	190	230
152 x 89	16	152.4	88.7	4.5	7.7	20.32	270	315	195	235
127 x 76	13	127.0	76.0	4.0	7.6	16.52	280	325	200	245

A Guide to Specifying Knauf Fireboard

Table A.3
Columns (UKC)
Dimensions to BS4 Part 1:2005

Serial size

mm

Mass per metre

kg

Depth of section D

mm

Width of section B

mm

Thickness

mm

Web t

mm

Flange T

mm

Area of section

cm²

3 sides

4 sides

3 sides

4 sides

1086

990

900

818

744

677

634

551

467

393

340

287

235

202

177

153

129

283

240

198

158

137

118

97

167

132

107

89

73

127

113

100

86

71

60

52

46

51

44

37

30

23

569.5

549.7

531.4

514.1

497.8

483.1

474.6

455.6

436.6

419.0

406.4

393.6

381.0

374.6

368.2

362.0

355.6

365.3

352.5

339.9

327.1

320.5

314.5

307.9

289.1

276.3

266.7

260.3

254.1

241.4

235.0

228.6

222.2

215.8

209.6

206.2

203.2

170.2

166.0

161.8

157.6

152.4

454.4

448.3

442.3

436.9

432.1

427.8

424.0

418.5

412.2

407.0

403.0

399.0

394.8

374.7

372.6

370.5

368.6

322.2

318.4

314.5

311.2

309.2

307.4

265.2

261.3

258.8

256.3

254.6

213.9

212.1

210.3

209.1

206.4

205.8

204.3

203.6

157.4

155.9

154.4

152.9

152.2

78.0

71.9

65.9

60.5

55.6

51.2

47.6

42.1

35.8

30.6

26.6

22.6

18.4

16.5

14.4

12.3

10.4

26.8

23.0

19.1

15.8

13.8

12.0

9.9

19.2

15.3

12.8

10.3

8.6

18.1

16.3

14.5

12.7

10.0

9.4

7.9

7.2

11.0

9.5

8.0

6.5

5.8

125

115

106

97

88.9

81.5

77.0

67.5

58.0

49.2

42.9

36.5

30.2

27.0

23.8

20.7

17.5

44.1

37.7

31.4

25.0

21.7

18.7

15.4

31.7

25.3

20.5

17.3

14.2

30.1

26.9

23.7

20.5

17.3

14.2

12.5

11.0

15.7

13.6

11.5

9.4

6.8

1387

1263

1150

1044

948

863

807.548

701.930

594.909

500.574

433.036

365.708

299.432

257.219

225.506

194.803

164.335

360.426

305.789

252.414

201.364

174.415

150.202

123.448

212.855

168.134

136.381

113.311

93.100

162.00

145.00

127.00

109.636

90.427

76.373

66.282

58.731

65.20

56.10

47.112

38.263

29.245

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90

110

130

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55

60

75

85

100

120

145

60

75

90

110

130

160

180

200

120

145

165

195

235

305

10

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15

20

20

25

20

25

30

35

40

45

60

70

80

90

110

135

45

55

60

75

85

100

120

145

60

75

90

110

135

160

180

200

120

145

165

195

235

305

Section factor A/V(Hp/A)

Profile

Box

3 sides

4 sides

3 sides

4 sides

15

20

10

15

20

25

15

20

25

30

20

25

35

40

25

30

40

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75

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60

80

85

115

75

100

100

135

85

115

120

160

100

135

120

160

120

160

155

210

155

210

Tables A, B, C, and D, provide the Knauf Fireboard specification against the fire resistance period (minutes). The denoted A/V (Hp/A values) stated are the maximum acceptance for the specification solutions. Therefore, any universal steels less than or equal to this value allows you to specify the number and layers of Knauf Fireboard.

Let's share an example:

You are required to provide fire protection (loadbearing capacity) of 60 minutes to a 3-sided 'I' section beam (254 x 102 x 22) in bending supporting concrete slabs. If the critical temperature is unknown, reference can be made to Table B.1 of the Yellow Book – ASFP Yellow Book – Fire Protection for structural steel in buildings Volume 1, 6th Edition (2025), the default critical temperature is denoted as 580 °C. As per Table D.2 a 254 x 102 x 22 Universal Beam, requiring 3-sided boxed protection the A/V (Hp/A) is 220.

By cross referencing to Table B, critical design temperature range of 580 °C, it is acceptable to specify 1 x 20mm Knauf Fireboard. The A/V (Hp/A) denoted must be greater or equal to the A/V (Hp/A) for the 254 x 102 x 22 Universal Beam.

Important

The critical temperatures of steel sections will vary on a project to project bases, dependent on location and intended use, and therefore you must consult with the structural engineer to gain confirmation the specific design temperatures that you need to use to help the determine your fire protection solution.

For further The Knauf Fireboard Frameless Encasement System solutions to support critical design temperature solutions less than 500 °C, please contact our Technical Services;
Email: technical-uk@knauf.com or call 0800 521050.

Critical design temperature of 620 °C

Table A

Knauf board specification	Fire Resistance Period (minutes)			
	30	60	90	120
1 x 15mm Knauf Fireboard		Hp/A 264	Hp/A 102	
1 x 20mm Knauf Fireboard		Hp/A 264	Hp/A 191	
2 x 15mm Knauf Fireboard		Hp/A 270	Hp/A 204	Hp/A 103
2 x 20mm Knauf Fireboard			Hp/A 270	Hp/A 238
2 x 25mm Knauf Fireboard				Hp/A 270

Critical design temperature of 580 °C

Table B

Knauf board specification	Fire Resistance Period (minutes)			
	30	60	90	120
1 x 15mm Knauf Fireboard	Hp/A 264	Hp/A 199	Hp/A 86	
1 x 20mm Knauf Fireboard		Hp/A 264	Hp/A 158	
2 x 15mm Knauf Fireboard		Hp/A 270	Hp/A 166	Hp/A 90
2 x 20mm Knauf Fireboard			Hp/A 270	Hp/A 198
2 x 25mm Knauf Fireboard				Hp/A 270

Critical design temperature of 550 °C

Table C

Knauf board specification	Fire Resistance Period (minutes)			
	30	60	90	120
1 x 15mm Knauf Fireboard	Hp/A 264	Hp/A 156	Hp/A 74	
1 x 20mm Knauf Fireboard		Hp/A 264	Hp/A 131	
2 x 15mm Knauf Fireboard		Hp/A 270	Hp/A 150	Hp/A 84
2 x 20mm Knauf Fireboard			Hp/A 270	Hp/A 171
2 x 25mm Knauf Fireboard				Hp/A 270

Critical design temperature of 500 °C

Table D

Knauf board specification	Fire Resistance Period (minutes)			
	30	60	90	120
1 x 15mm Knauf Fireboard	Hp/A 264	Hp/A 126	Hp/A 63	
1 x 20mm Knauf Fireboard	Hp/A 264	Hp/A 240	Hp/A 100	
2 x 15mm Knauf Fireboard		Hp/A 270	Hp/A 129	Hp/A 75
2 x 20mm Knauf Fireboard			Hp/A 270	Hp/A 141
2 x 25mm Knauf Fireboard				Hp/A 270

Table D.3 UK Columns (UKC)
Tables are extracted from Annex D of ASFP Yellow Book – Fire Protection for structural steel in buildings Volume 1, 6th Edition. The Knauf Fireboard Frameless Encasement System is applicable to 'Box' Universal Steel Columns.

A Guide to Specifying Knauf Fireboard

Steel section	Box and solid protection				
Universal beams, universal columns and joists (plain and castellated)	4 sides	3 sides	3 sides	2 sides	1 sides
	Hp	2B + 2D	B + 2D	B + 2d	B + D
Structural and rolled tees	4 sides	3 sides	3 sides		
	Hp	2B + 2D	B + 2D		
Angles	4 sides	3 sides	3 sides		
	Hp	2B + 2D	B + 2D		
Channels	4 sides	3 sides	3 sides		
	Hp	2B + 2D	B + 2D		
Hollow sections, square or rectangular	4 sides	3 sides			
	Hp	2B + 2D	B + 2D		
Hollow sections, Circular			Note: The air space created in boxing a section improves the insulation and a value of Hp/A, and therefore Hp, higher than for profile protection would be anomalous. Hence Hp is taken as the circumference of the tube and not 4D.		
		πD			
Example continued	c) Box - 4 sided exposure		d) Box - 3 sided exposure		
	c)	Box protection - 4 sided exposure	d)	Box protection - 3 sided exposure	
	Hp	$= 3B + 2D - 2t = 612.9 + 412.4 - 15.8 = 1009.5\text{mm} = 1.01\text{m}$	Hp	$= B + 2D = 204.3 + 412.4 = 616.7\text{mm} = 0.617\text{m}$	
	Hp/A	$= 0.821 / 0.0066282 = 123.9\text{m}^{-1}$	Hp/A	$= 0.617 / 0.0066282 = 93.04\text{m}^{-1}$	

Table extracted from Annex D.1 of ASFP Yellow Book – Fire Protection for structural steel in buildings Volume 1, 6th Edition. Table D.1 – Protection configurations with values of perimeter A in the calculation of section factor A/V



Note 1: Knauf Fireboard Frameless Encasement testing has been completed on Universal Steel Beams and Universal Steel Columns 'I' profiles.

Note 2: Should a project wish to apply these results to any other shape, type or gauge of profile, or to any other application than those explicitly tested by Knauf, then calculations and confirmation of performance must be sought by a structural and/or fire engineer. Guidance on applicability can be found in EN 13381-4 Annex A (normative) and the Yellow Book (Fire protection for structural steel in buildings, Volume 1, 6th Edition) to qualify the requirements for the different types of steel sections.

Standard Arrangement Details

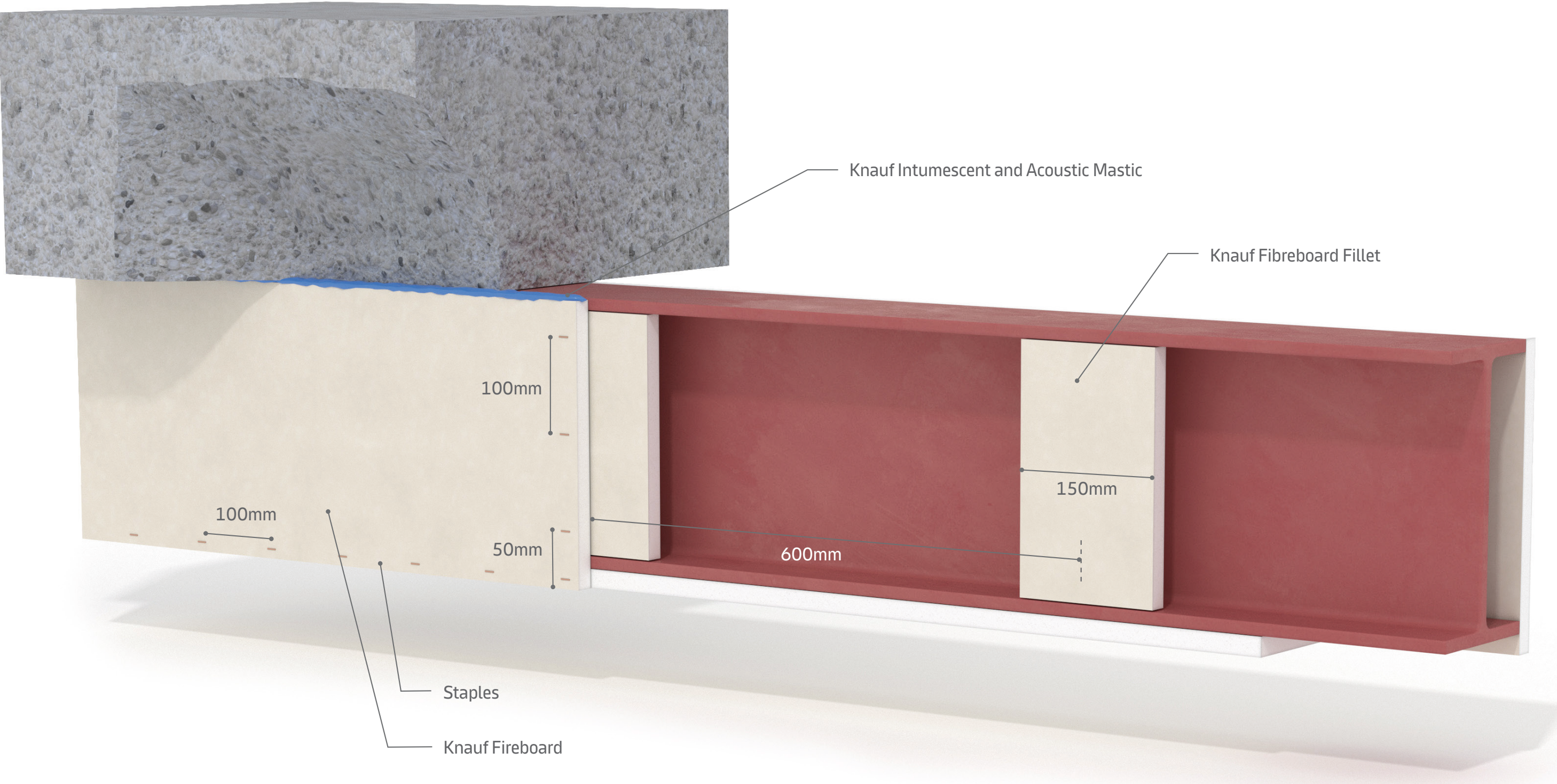


Figure 6: Isometric view of a 3-sided, single layer of Knauf Fireboard protecting Universal Steel Beam
NB (not to scale)

Standard Arrangement Details

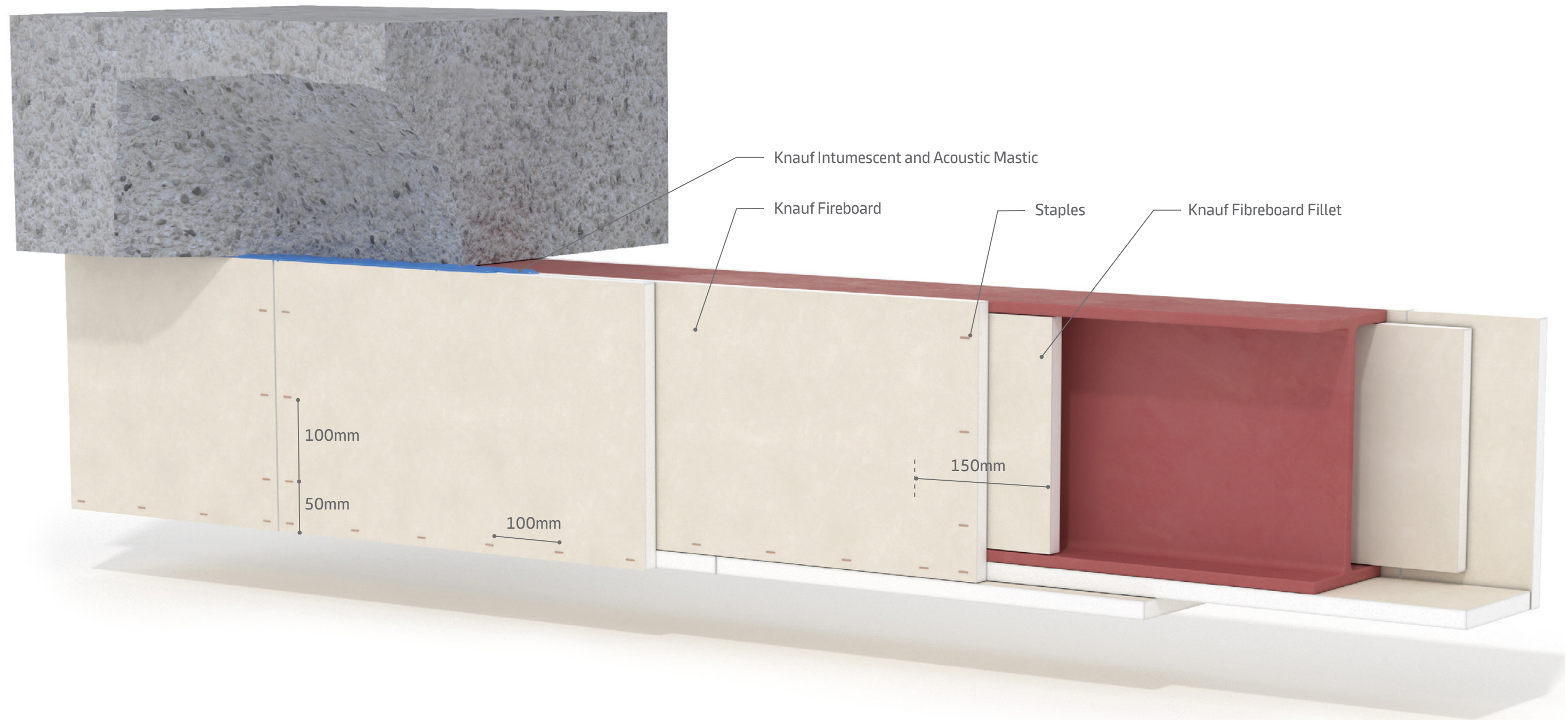


Figure 7: Isometric view of a 3-sided, double layer of Knauf Fireboard protecting Universal Steel Beam
NB (not to scale)

Standard Arrangement Details

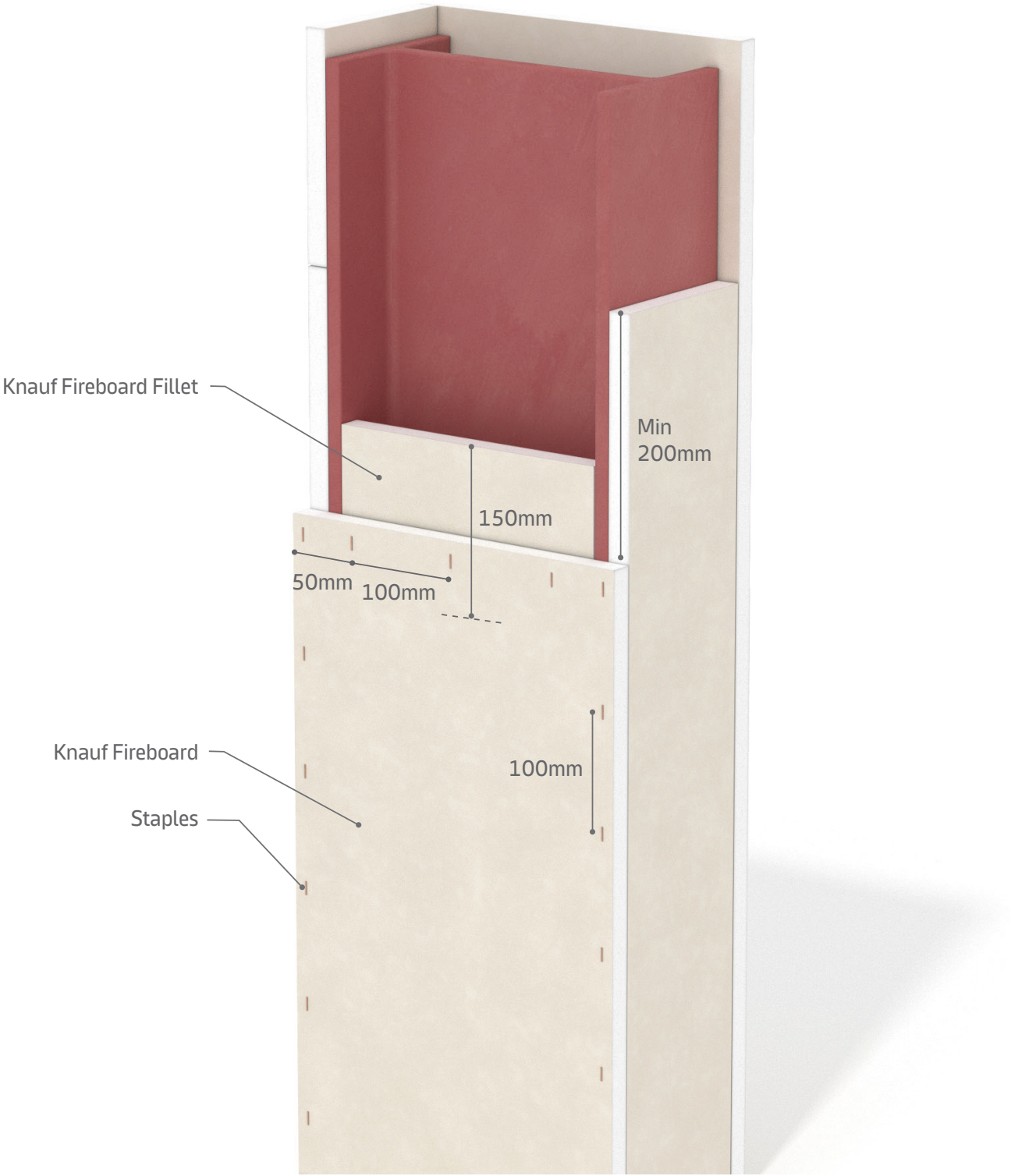


Figure 8: Isometric view of a 4-sided, single layer of Knauf Fireboard protecting Universal Steel Column
NB (not to scale)

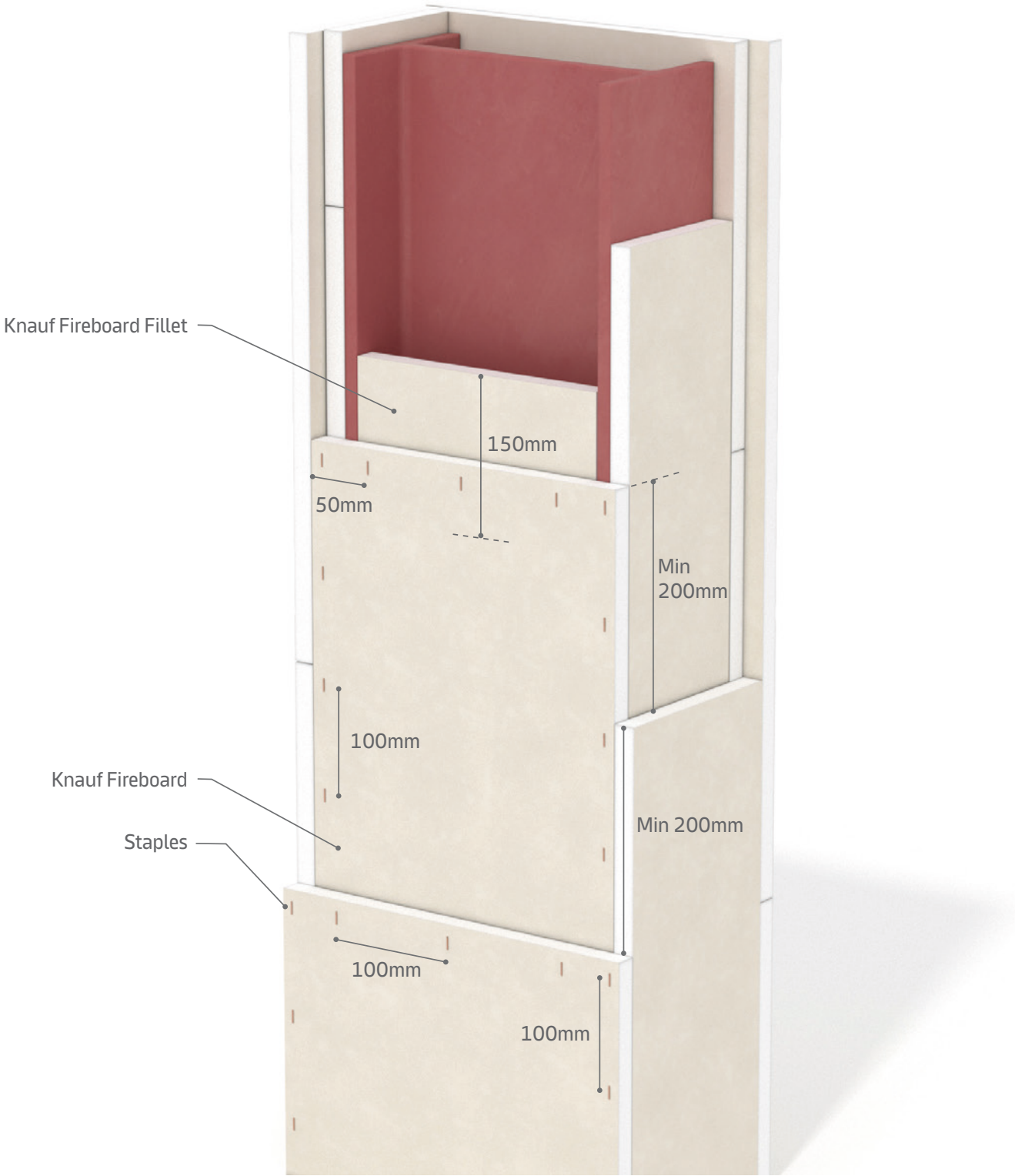


Figure 9: Isometric view of a 4-sided, double layer of Knauf Fireboard protecting Universal Steel Column
NB (not to scale)

Stapling

Stapling requirements

Fireboard thickness (mm)	Board-to-Board Edge Board-to-Fillet	Board-to-Board Edge Outer Board-to-Inner Board	Staples manufactured to harmonised standard
15	35		BS EN 14566
20	50		BS EN 14566
2x15	50	35	BS EN 14566
2x20	50	50	BS EN 14566
2x25	50	50	BS EN 14566

Table E: Summary of the staple's specification required to fix Knauf Fireboards

Notes:

- Staples are required to conform to BS EN 14566:2008+A1:2009.
- Steel wire diameter ≥1.6mm gauge, 1.34mm diameter, CH point, EG 3 Finish.

Installation Guidance

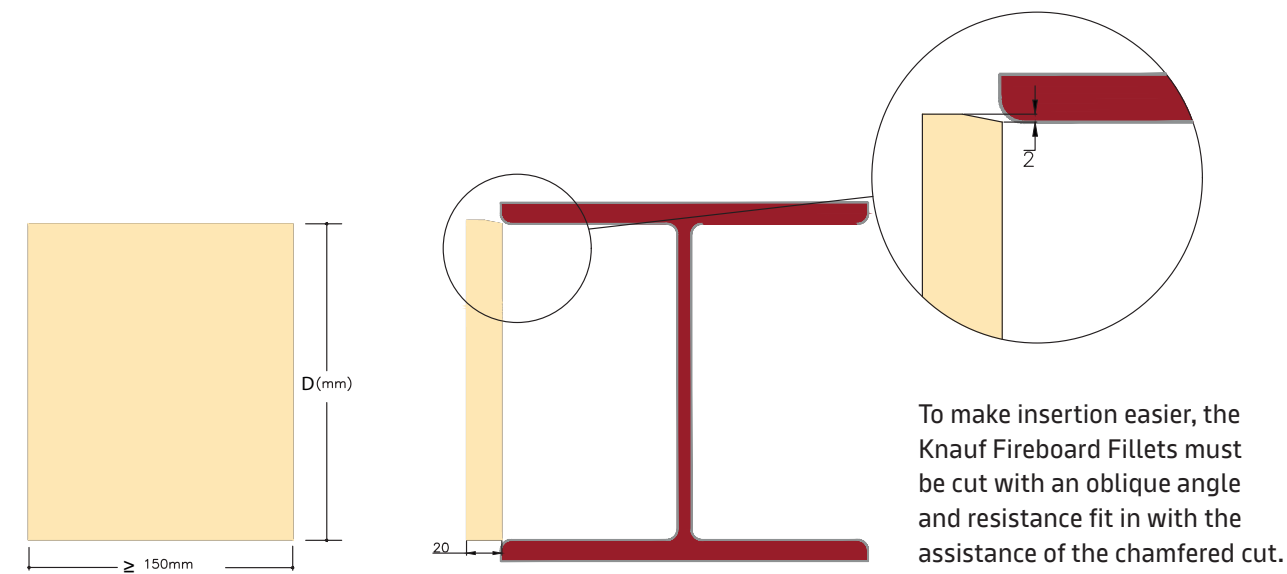


Figure 10: Size and installation Knauf Fireboard Fillets

Knauf Fireboard fillets dimensions are determined by depth of Universal Steel Beam. Column depth with the provision to add additional 2mm in depth (D).

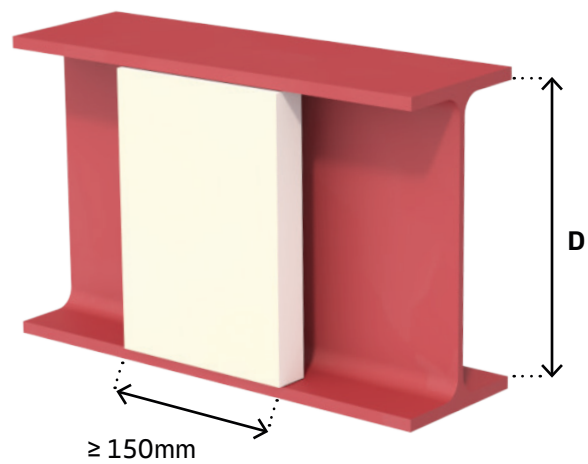


Figure 11: Isometric detail of Knauf Fireboard Fillet

Installation Guidance

Universal Steel Columns: Knauf Fireboard – Single layer details

- 1. Install the Knauf Fireboard onto the flange of the Universal Steel Column. The required width is based on the flange width (W) of the Universal Steel Column, with an additional 2mm allowance.

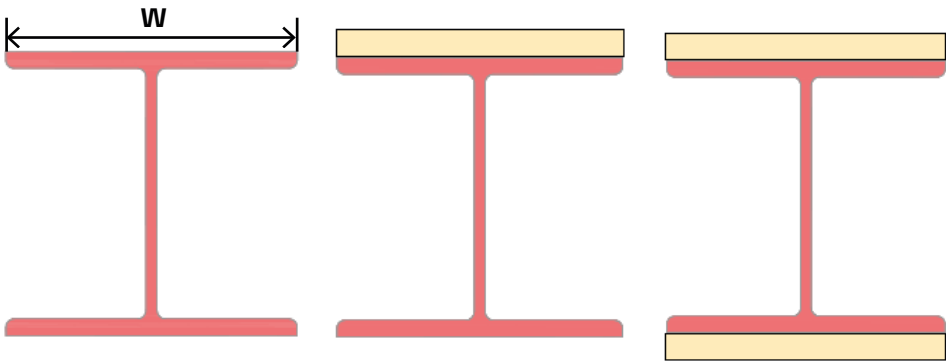


Figure 12: Plan view of Universal Steel Column showing sequence of first layer of Knauf Fireboard to flange side
NB (not to scale)

Note 1: Knauf Fireboard should be cut using a Track Saw. To aid installation of Knauf Fireboard a clamp can be used to hold into place.

- 2. Before installing Knauf Fireboard to the remaining sides of Universal Steel Column, install 20mm thick Knauf Fireboard Fillets, within the Universal Steel Column as shown in figure 13. These are required to be at abutments, then spaced at 600mm centres and to coincide with horizontal joints. These fillets should be friction fitted into position. The dimensions of the Knauf Fireboard Fillets is 20mm in thickness, 150mm in depth, and a width determined by the inner dimensions of the Universal Steel Column, with an additional 2mm allowance. For ease of installation, the Knauf Fireboard Fillets should have a chamfered edge to ensure they are securely fitted between the flanges of the Universal Steel Column. Refer to figure 8 for the specification and installation guidance of Knauf Fireboard Fillets.

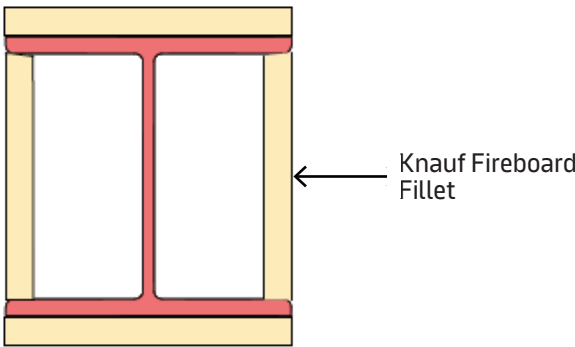


Figure 13: Plan view of Universal Steel Column showing location of Knauf Fireboard Fillets
NB (not to scale)

- 3. Install Knauf Fireboard as shown in figure 14. The depth (D) of Knauf Fireboard is determined by measuring the depth of the Universal Steel Column and the inclusion of already installed Knauf Fireboard.

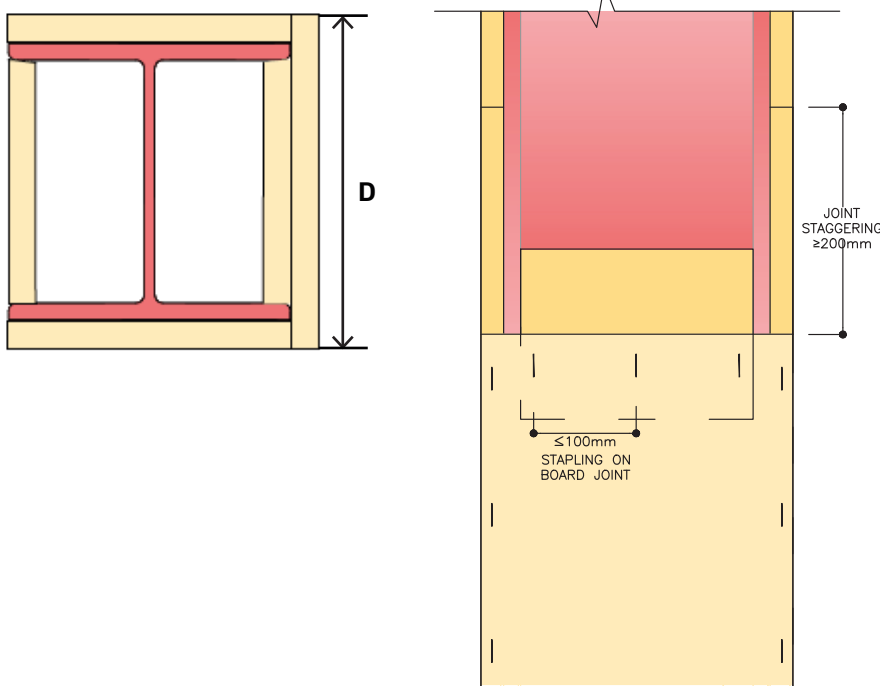


Figure 14: Plan and Elevation view of Universal Steel Column with installed Knauf Fireboard
NB (not to scale)

Note 2: Ensure that the Knauf Fireboard joints on both the width and depth sections of the Universal Steel Column are staggered by at least 200mm.

- 4. Knauf Fireboards should be fixed together at the board-to-board edge interface using staples. Details regarding the required length and specifications of the staples can be found in Table E. Staples must be fixed at a maximum spacing of 100mm. At the location of Knauf Fireboard fillets, the first staple Knauf Fireboard to fix into Knauf Fireboard fillet should be fixed 50mm inwards from external each edge of Knauf Fireboard, with the remaining staples spaced no more than 100mm apart.

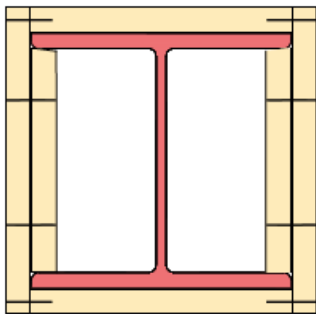


Figure 15: Plan view of Universal Steel Column showing remaining applied Knauf Fireboard
NB (not to scale)

Note 3: Knauf Fireboard is required to be abutted ensuring no gaps.

Installation Guidance

Universal Steel Columns: Knauf Fireboard – Double layer details

- 1. Install the Knauf Fireboard onto the flange of the Universal Steel Column. The required width is based on the flange width of the Universal Steel Column, with an additional 2mm allowance.

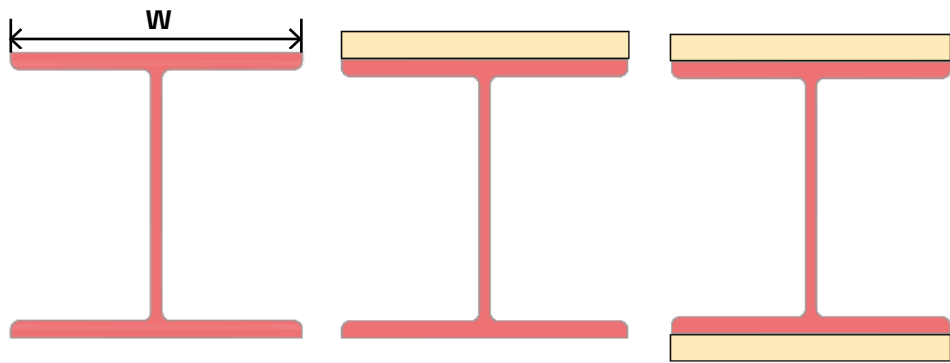


Figure 16: Plan view of Universal Steel Column showing sequence of first layer of Knauf Fireboard to flange side
NB (not to scale)

Note 1: Knauf Fireboard should be cut using a Track Saw. To aid installation of Knauf Fireboard a clamp can be used to hold into place.

- 2. Before installing Knauf Fireboard to the remaining sides of Universal Steel Column, install Knauf Fireboard Fillets as per figure 13. This to be located at abutments, 600mm centres and coinciding horizontal joints.
- 3. Install Knauf Fireboard as shown in figure 14. The depth (D) of Knauf Fireboard is determined by measuring the depth of the Universal Steel Column and the inclusion of already installed Knauf Fireboard

Note 2: Ensure that the Knauf Fireboard joints on both width and depth sections of the Universal Steel Column are staggered by at least 200mm.

- 4. Knauf Fireboard should be fixed together at the board-to-board edge interface using staples. Details regarding the required length and specification of the staples can be found in Table E. Staples must be fixed at a maximum 100mm centres. At the location of Knauf Fireboard Fillets, the first staple Knauf Fireboard to fix into Knauf Fireboard Fillet should be fixed 50mm inward from each edge, with the remaining staples spaced no more than 100mm apart.

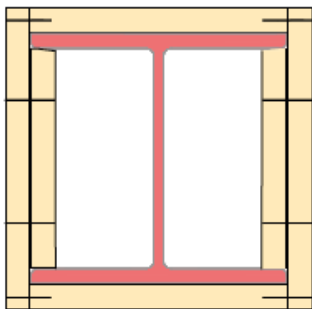


Figure 17: Plan view of Universal Steel Column showing completion of inner layer Knauf Fireboard with Fireboard Fillets
NB (not to scale)

- 5. Install outer layer of Knauf Fireboard on both the depth and width of Universal Steel Column. To account for tolerance, verify the width of Knauf Fireboard against inner layer of Knauf Fireboard. Ensure a minimum stagger of 200mm between both inner layer and outer layers of Knauf Fireboard. Secure the outer layer of Knauf Fireboard using staples at maximum 100mm centres.

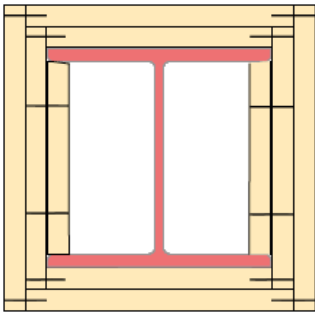


Figure 18: Plan view of Universal Steel Column with installed double layer Knauf Fireboard
NB (not to scale)

Installation Guidance

Universal Steel Beams: Knauf Fireboard – Single layer 3-sided details

1. Before the installation of Knauf Fireboard, Knauf Fireboard Fillets must be friction-fitted between the flanges of the Universal Steel Beam. Refer to figure 8 for specification and installation guidance for the Knauf Fireboard Fillets. These fillets must be installed at equal intervals, with a maximum spacing of 600mm along the length of the Universal Steel Beam. Knauf Fireboard Fillets are required at locations where Knauf Fireboard joints coincide in single-layer Knauf Fireboard solutions. Also install Knauf Fireboard Fillet to abutments.

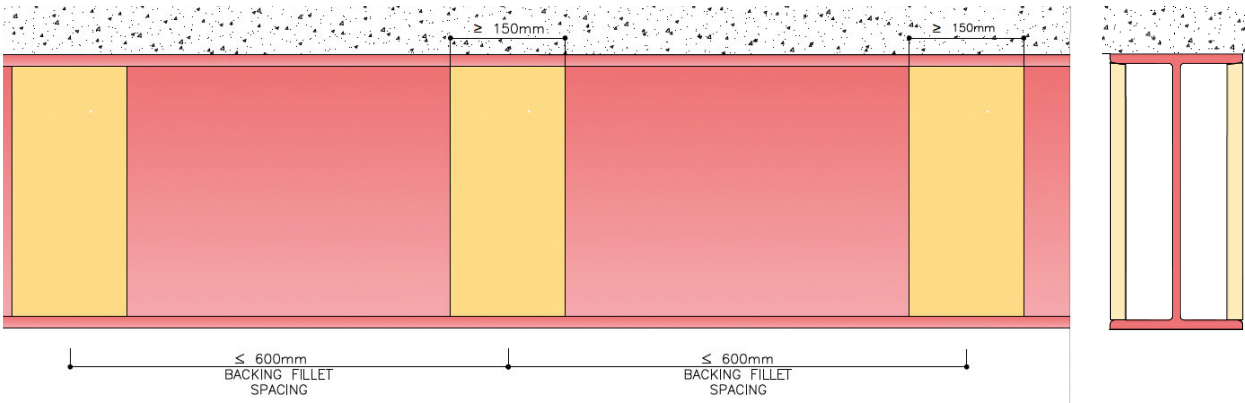


Figure 19: Elevation and cross-section view of Universal Steel Beam, showing location of Knauf Fireboard Fillets.
NB (not to scale)

Note 1: Knauf Fireboard should be cut using a Track Saw.

2. Install Knauf Fireboard to the web sides of the Universal Steel Beam. The depth of the Knauf Fireboard is determined by the depth of Universal Steel Beam and the required thickness of the Knauf Fireboard solution. Secure the Knauf Fireboard to the Knauf Fireboard Fillets using staples, ensuring first staple fixing from each edge of Knauf Fireboard of 50mm, with remaining at maximum 100mm centres. Details regarding the required length and specification of the staples can be found in Table E.

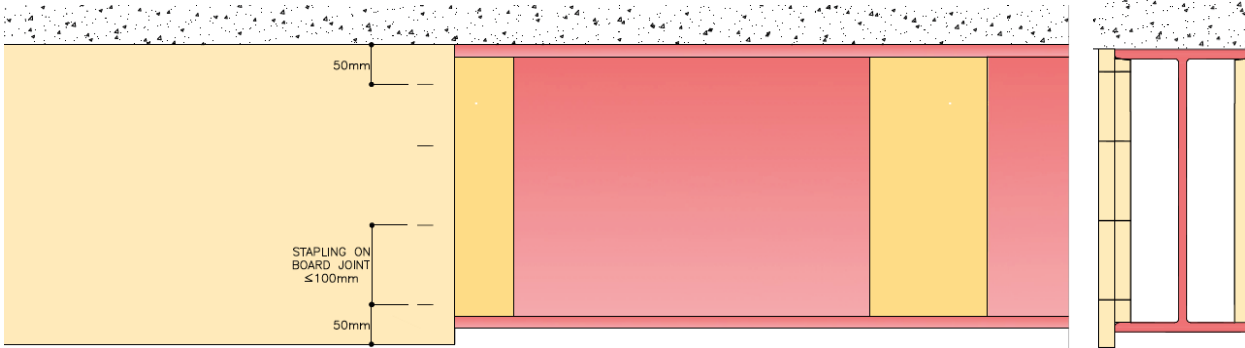


Figure 20: Elevation and cross-section view of Universal Steel Beam, showing fixing of Knauf Fireboard
NB (not to scale)

Note 2: Consider tolerances with the superstructure.

3. On completion of Knauf Fireboard to both sides of the Universal Steel Beam, the underside of the Universal Steel Beam can be cladded with Knauf Fireboard. Cut the Knauf Fireboard to the required size, position it in place by friction fitting, and secure using staples. Board to board edge fixings must be at a maximum of 100mm centres.

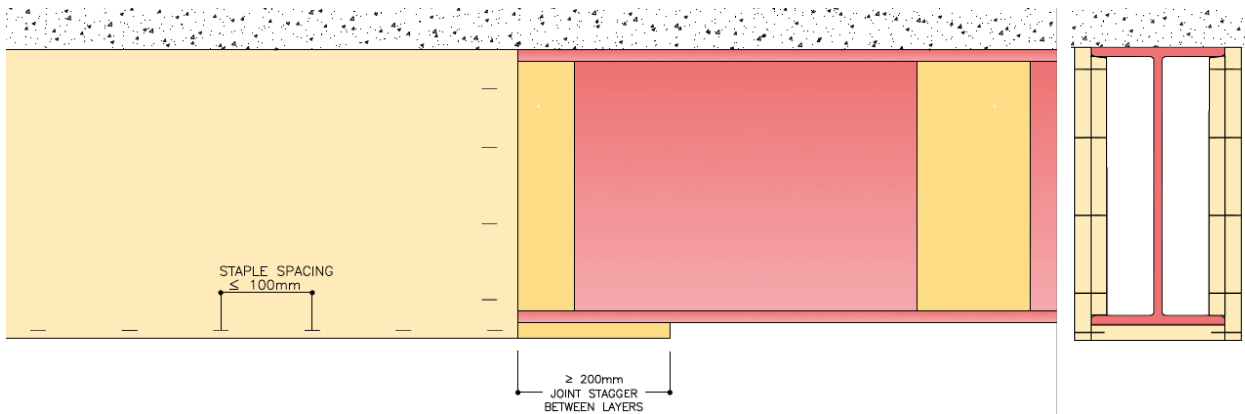


Figure 21: Elevation and cross-section view of Universal Steel Beam, showing fixing of Knauf Fireboard to underside of Universal Steel Beam
NB (not to scale)

Note 3: Ensure joint alignment of both Knauf Fireboard fixed either side of Universal Steel Beam. Minimum stagger equal or greater than 200mm between Knauf Fireboard fixed either side of the Universal Steel Beam and underside of Universal Steel Beam.

4. Inspect the interface between the cladded Knauf Fireboard and the superstructure. Apply a bead of Knauf Intumescent and Acoustic Mastic along the outer edge of the Knauf Fireboard where it interfaces with the superstructure, ensuring there are no gaps.

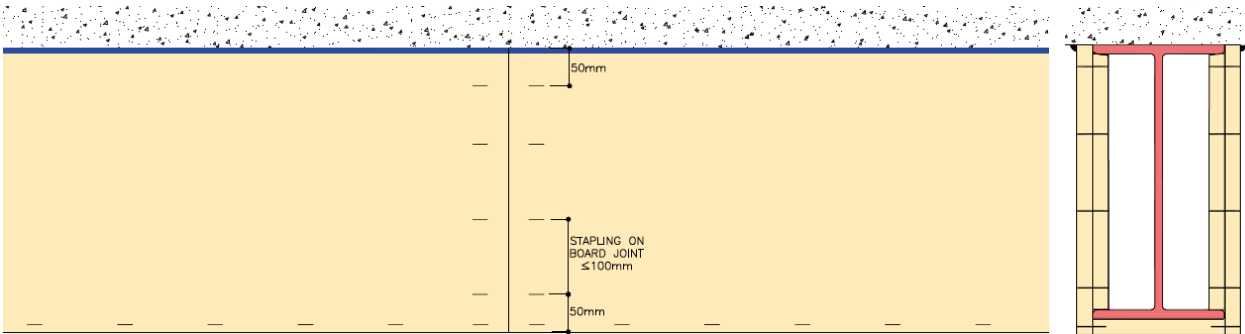


Figure 22: Elevation and cross-section view of Universal Steel Beam, showing completion of Knauf Fireboard installed
NB (not to scale)

Note 4: Knauf Fireboard is required to be abutted ensuring no gaps.

Note 5: Permissible Knauf Fireboard cladding span ≤600mm. For spans deeper than 600mm, contact Technical Services via email:technical-uk@knauf.com or call 0800 521050 (option 2).

Installation Guidance

Universal Steel Beams: Knauf Fireboard – Double layer 3-sided details

1. Before the installation of Knauf Fireboard, Knauf Fireboard Fillets must be friction-fitted between the flanges of the Universal Steel Beam. Refer to figure 8 for specification and installation guidance for the Knauf Fireboard Fillets. These fillets must be installed at equal intervals, with a maximum spacing of 600mm along the length of the Universal Steel Beam. Knauf Fireboard Fillets are required at locations where Knauf Fireboard joints coincide in single-layer Knauf Fireboard solutions. Also install Knauf Fireboard Fillet to abutments.

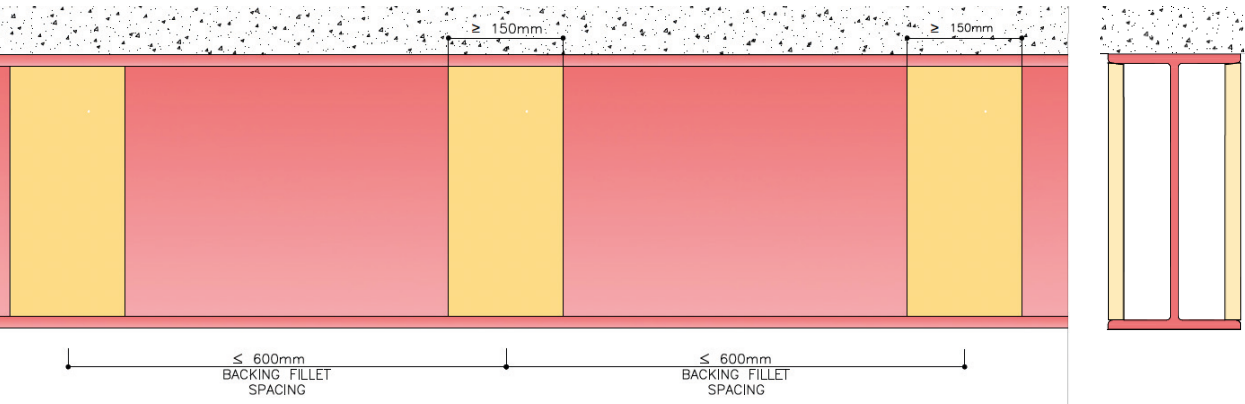


Figure 23: Elevation and cross-section view of Universal Steel Beam, showing location of Knauf Fireboard Fillets
NB (not to scale)

Note 1: Knauf Fireboard should be cut using a Track Saw.

2. Install Knauf Fireboard to the web sides of the Universal Steel Beam. The depth of the Knauf Fireboard is determined by the depth of Universal Steel Beam and the required thickness of the Knauf Fireboard solution. Secure the Knauf Fireboard to the Knauf Fireboard Fillets using staples, ensuring first staple fixing from each edge of Knauf Fireboard of 50mm, with remaining at maximum 100mm centres. Details regarding the required length and specification of the staples can be found in Table E.

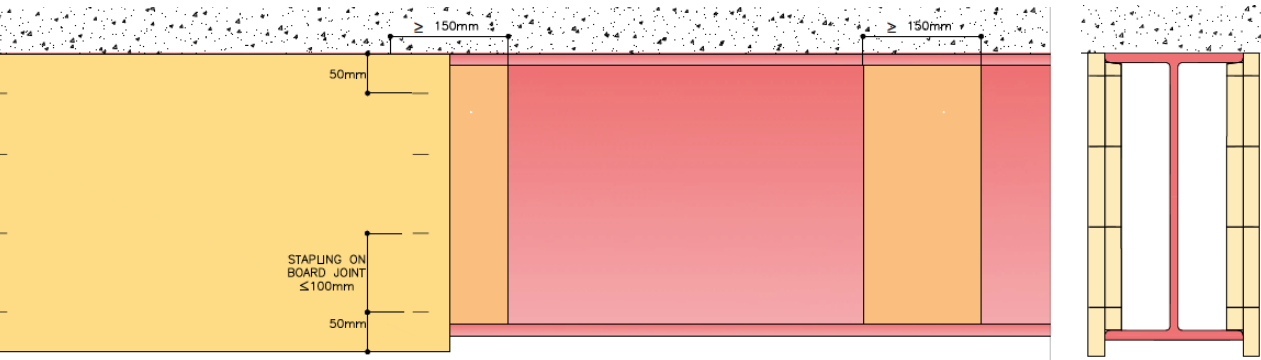


Figure 24: Elevation and cross-section view of Universal Steel Beam, showing fixing of Knauf Fireboard
NB (not to scale)

Note 2: Consider tolerances with the superstructure.

3. On completion of Knauf Fireboard to both sides of the Universal Steel Beam, the underside of the Universal Steel Beam can be cladded with Knauf Fireboard. Cut the Knauf Fireboard to the required size, position it in place by friction fitting, and secure using staples. Board to board edge fixing at maximum 100mm centres.

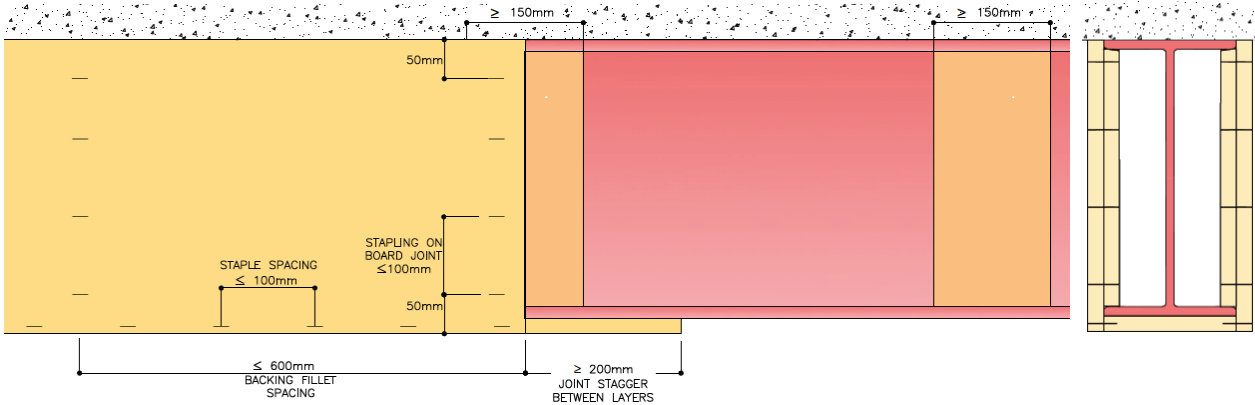


Figure 25: Elevation and cross-section view of Universal Steel Beam, showing fixing of Knauf Fireboard to underside of Universal Steel Beam
NB (not to scale)

Note 3: Ensure joint alignment of both Knauf Fireboard fixed either side of Universal Steel Beam. Minimum stagger equal or greater than 200mm between Knauf Fireboard fixed either side of the Universal Steel Beam and underside of Universal Steel Beam.

4. Install the outer layer of Knauf Fireboard on both the depth and width of the already cladded Universal Steel Beam. To account for tolerances, verify the depth of the Knauf Fireboard against the already installed Knauf Fireboard. Ensure a minimum 200mm offset between the inner and outer layers of Knauf Fireboard. Secure the outer layer using staples, maintaining equal spacing with a maximum of 100mm between staple.

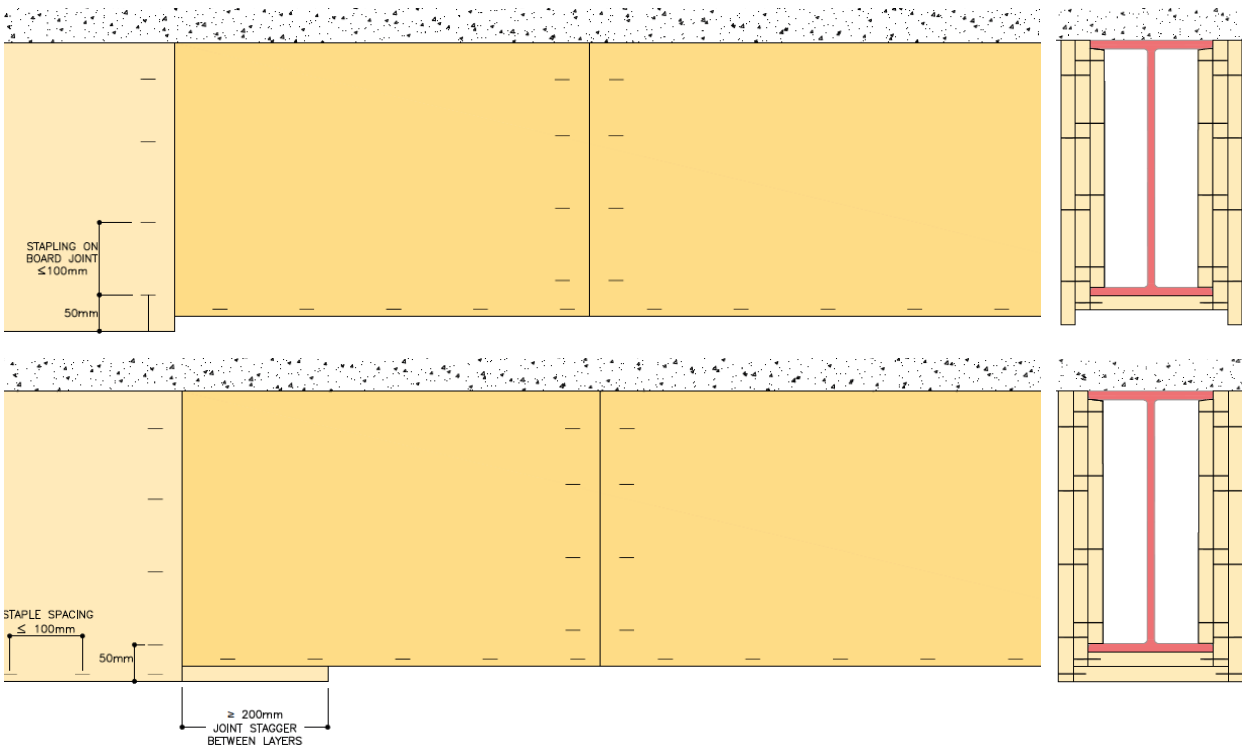


Figure 26: Elevation view of Universal Steel Beam showing fixing of outer layer Knauf Fireboard to underside of Universal Steel Beam
NB (not to scale)

Installation Guidance

Universal Steel Beams: Knauf Fireboard – Double layer 3-sided details

- 5. Inspect the interface between the cladded Knauf Fireboard and the superstructure. Apply a bead of Knauf Intumescent and Acoustic Mastic along the outer edge of the Knauf Fireboard where it interfaces with the superstructure, ensuring there are no gaps.

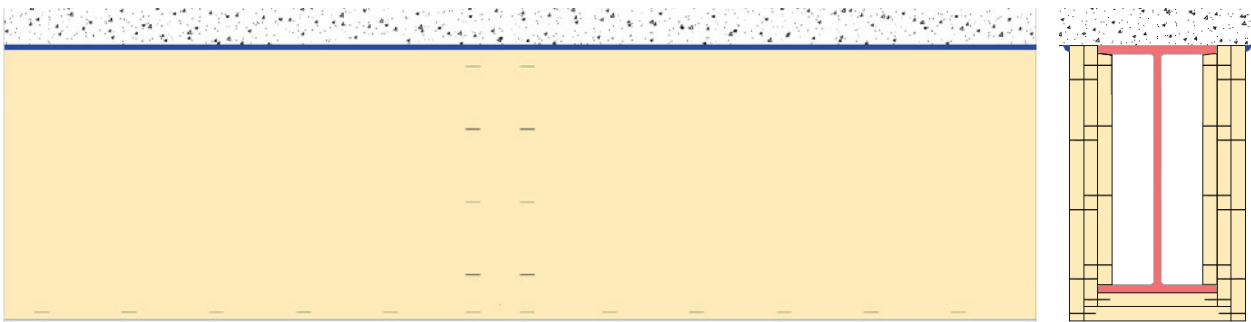


Figure 27: Elevation and cross-section view of Universal Steel Beam, showing completion of Knauf Fireboard installed
NB (not to scale)

Note 4: Permissible Knauf Fireboard cladding span ≤600mm. For spans deeper than 600mm, contact Technical Services via email:technical-uk@knauf.com or call 0800 521050 (option 2).

For 4-sided Universal Steel Beam Protection, follow recommendations set within 3-sided Universal Steel Beam Protection with additional step for cladding remaining Universal Steel Beam Flange.

Interior Finishing Solutions



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Our jointing range at Knauf, which includes powdered jointing compounds, ready-mixed compounds, and tapes and beads, is designed to deliver the best possible results when bedding tapes and beads or finishing joints in readiness for decoration.

Whether hand or machine applied, our jointing ranges have been developed to comply with BS EN 13963:2014, ensuring optimal results every time. After application, they provide a smooth finish that is easy to sand. For further information, consult Knauf Interior Finishing Solutions document and or contact Technical Services via email:technical-uk@knauf.com or call 0800 521050 (option 2).

Sustainability

Knauf is committed to build a more sustainable world.

We are working to ensure that our People, Planet, Prosperity strategy is considered in all areas of our business where we have an influence. We are reducing our carbon footprint, improving the recycled content of our products, taking care of our people and increasing our social value.

Knauf Sustainability

- No hazardous chemicals. Our products have no REACH substances of very high concern (SVHC), boards are easily cut and installed with minimal dust
- Recyclable. Knauf Fireboard and steel are recyclable to reduce waste to landfill



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We are happy to advise on the suitability of different courses and the content can be adapted to suit the requirements of the delegates.

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