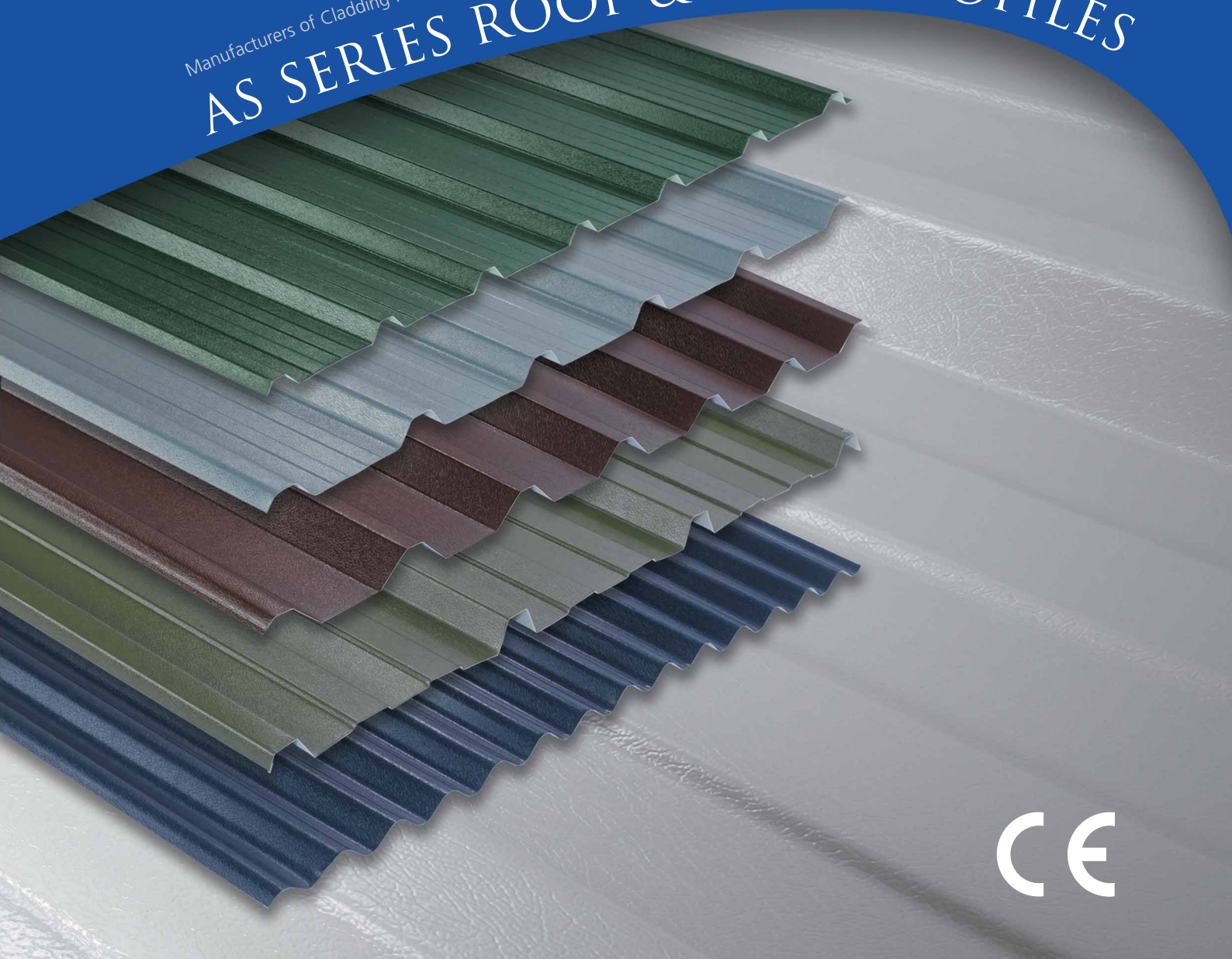


SINGLE SKIN SYSTEMS

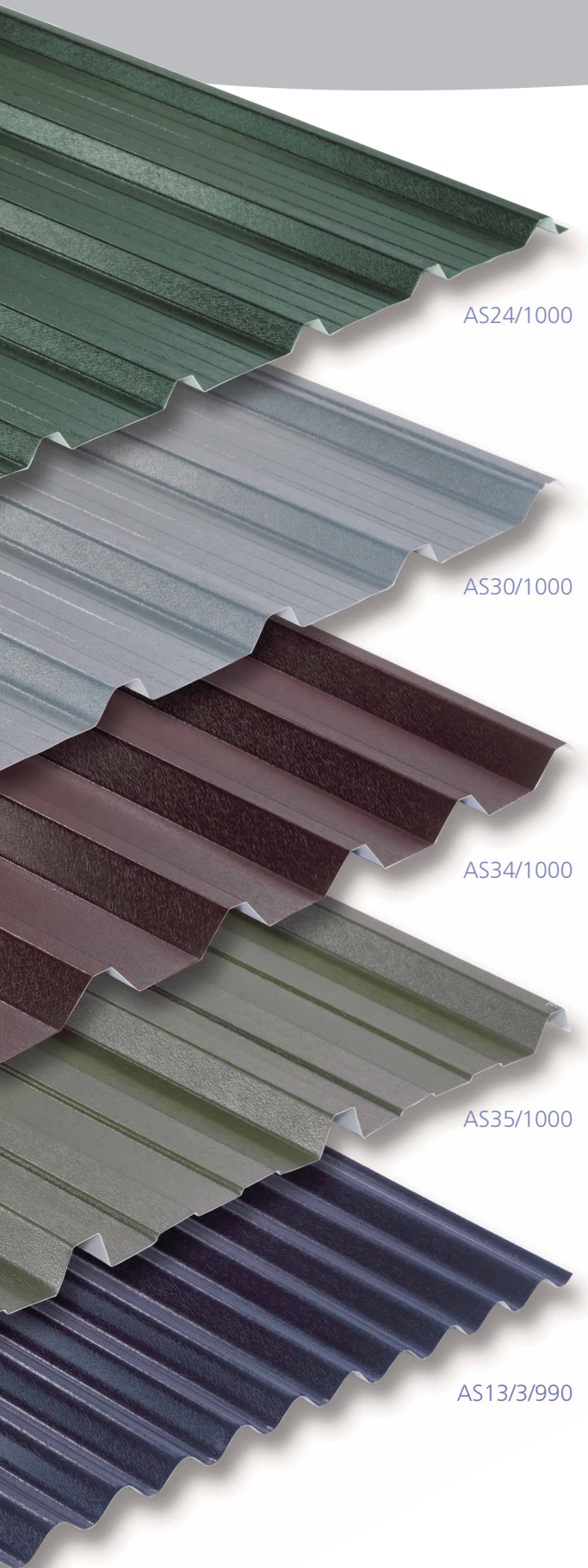
Manufacturers of Cladding Products for the Construction Industry

AS SERIES ROOF & WALL PROFILES



SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES



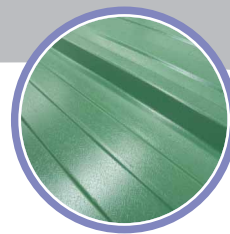
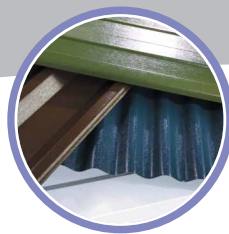
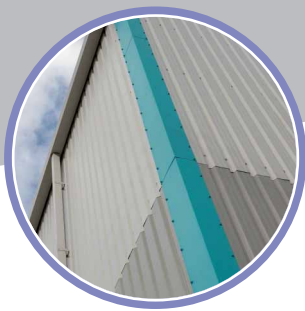
INTRODUCTION

Index		
Introduction	2	This brochure describes Steadmans' profiled metal systems for single skin roofs and walls; it includes technical description and performance data for the systems and offers guidance for designers.
About Steadmans	2	
Requirements	3	
Technical description	3 - 4	
Performance	5 - 15	
AS24/1000 profiles	5 - 6	
AS30/1000 profiles	7 - 8	
AS34/1000 profiles	9 - 10	
AS35/1000 profiles	11 - 12	
AS13/3/990 profiles	13 - 14	
Colours	15 - 16	
Accessories	16 - 17	
Design guidance	18 - 20	
Sitework	21 - 24	
Maintenance	25	
Supply and delivery	25	
Technical support	26	
References	26	

ABOUT STEADMANS

A Steadman & Son Limited (usually known as Steadmans) are one of the UK's leading manufacturers of roofing and cladding, supplying high quality cladding materials from our sites in England, Scotland and Northern Ireland. We offer total roofing and cladding solutions which we deliver with our dedicated haulage fleet.

Our continuous investment programme and on-going product development ensures we can provide high quality products promptly and at competitive prices.



AS SINGLE SKIN SYSTEMS

Steadmans' AS single skin roof and wall systems consist of coated steel sheets rolled to six different profiles; they may be used to form roofs - down to 4° pitch (6° if rooflights are required) - and walls. The system includes a comprehensive range of spacers, fixings, sealants, guttering, flashings and rooflights.

The AS single skin system offers rapid coverage and swift completion of a weatherproof building envelope to give a high performance building. The profiles may also be used in twin skin applications - see the separate Twin Skin Systems brochure.

CE MARKING

CE marking is mandatory for all single skin steel cladding systems covered by a harmonised technical specification, either a harmonised European Standard or a European Technical Assessment. This became mandatory from July 1, 2013.



- This regulation is EU law and is being adopted by all member states, including the UK.
- The entire supply and distribution chain is responsible for ensuring correct CE marking on products.
- Manufacturers, importers, and distributors must be aware of essential characteristics and specification requirements of the product for the member state they are selling in.

Steadmans undertook a rigorous process to ensure products covered by the regulations meet the requirements.

Steadmans supplies certification of CE marking and a declaration of performance with invoices, where required. For more information on how CE marking will affect you, please contact Steadmans on 01697 478 277 or visit www.steadmans.co.uk.

REQUIREMENTS

AS single skin roof and wall profiles are manufactured in a process certified to ISO 9001:2008.

Installation warranty

Steadmans offer an independent audit-based warranty for the AS single skin roofing and cladding system.

The QA+ warranty, from Auditing Workmanship & Materials Ltd, provides pre-site and on-site quality inspections and audits to ensure the high standards of construction and finishing which will maximise service life and reduce maintenance costs.

The QA+ warranty can be extended to a ten year insurance backed warranty covering defects arising from poor workmanship, defective materials and damage resulting from design defects. Contact Steadmans for more information about the warranties.



SPECIFICATION

NBS Plus is a library of technical product information written in NBS format, linked to NBS clauses and clause guidance. With NBS Plus, specifiers can select products quickly and accurately then drop the product information directly into a specification.

NBS Plus

NBS clauses for AS single skin roof and wall systems and other Steadmans products are now available for NBS subscribers.

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

TECHNICAL DESCRIPTION

Steel profiles

Standard external weather sheets are available in 0.5mm and 0.7mm thicknesses.

Tables 01 and 02 give the standard profile dimensions, weights, and manufacturing tolerances.

The steel used in the AS series roof and wall profiles is hot-dip galvanised to BS EN 10346:2009 or Aluzinc coated, then finished with one of the coatings listed in Table 03.

Weather sheets are available in a number of different profiles, many with matching roof and wall panel profiles. The following pages show the details and load tables for each profile.

In order to maintain our high standards of customer service we may replace the steel listed here with that of similar quality from different suppliers.



Table 01: Profile dimensions

Cover:	
• AS13/3	990mm
• all other panels	1000mm
Standard lengths	1000 - 12000mm (others available)
Weight:	
• 0.5mm thick	4.57 kg/m ²
• 0.7mm thick	6.49 kg/m ²

Table 02: Manufacturing tolerances

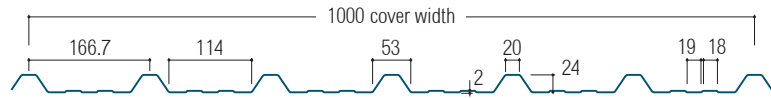
Cut to length	
• L < 3m	+/- 5mm
• L > 3m	+/- 10mm
Cover width	-0mm / +3mm
End square	-3mm / +3mm

Table 03: Single skin steel coatings

Weather sheet	200LG 200 micron PVC Plastisol	A high performance pre-painted steel system on a hot dipped galvanised substrate. The outer face is finished with a leather-grain embossed PVC while the inner face is finished with a heat cured epoxy paint system.
	Dobel Nova	A 50 micron thick acrylic polymer coating which has high wear resistance, excellent colourfastness and good flexibility. The coating contains no PVC or Isocyanates and the material is wholly recyclable.
	Polyester	A polyester coating with a medium term life.
	Agri-Steel	A polyester coating recommended for the agricultural market. Agri-Steel has a superior substrate coating and interior paint finish when compared to standard polyester.
	Tata HPS200	A durable organic coating with Scintilla finish on a substrate treated with hot-dipped zinc-aluminium alloy.
	Tata & Dobel PVDF	A 27 micron thick stoved fluoro carbon coating: excellent colour stability at temperatures as high as 120°C.

PERFORMANCE

AS24/1000R ROOF PROFILE



A medium profile roof sheet available in 0.5mm and 0.7mm thicknesses. A matching wall profile is available (see page 6 for load span tables).

Table 04: AS24/1000R steel roof profile • Thickness 0.5mm • Weight 4.57 kg/m²

Bottom flange in compression Moment capacity 0.513 kNm/m Moment of inertia 3.514 cm ⁴ /m		Top flange in compression Moment capacity 0.527 kNm/m Moment of inertia 3.514 cm ⁴ /m			Support width 40mm	Web crushing 8.318 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.07	1.53	1.18	0.94	0.77	0.62	0.49	0.40	0.33
double	2.12	1.57	1.21	0.96	0.79	0.65	0.56	0.48	0.42
triple	2.65	1.95	1.50	1.19	0.97	0.81	0.69	0.59	0.51
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.56	0.96	0.63	0.43	0.30	0.21	0.15	0.11	0.08
double	1.43	1.10	0.86	0.70	0.53	0.39	0.29	0.22	0.16
triple	1.74	1.34	1.06	0.74	0.53	0.39	0.29	0.22	0.16
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.73	1.99	1.51	1.18	0.94	0.77	0.64	0.53	0.45
double	2.18	1.67	1.32	1.06	0.87	0.73	0.61	0.52	0.44
triple	2.65	2.04	1.61	1.31	1.08	0.90	0.77	0.66	0.56

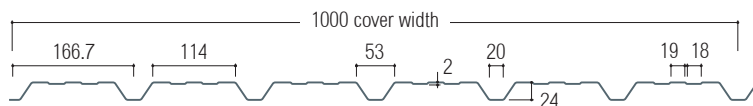
Table 05: AS24/1000R steel roof profile • Thickness 0.7mm • Weight 6.49 kg/m²

Bottom flange in compression Moment capacity 0.777 kNm/m Moment of inertia 5.229 cm ⁴ /m		Top flange in compression Moment capacity 0.823 kNm/m Moment of inertia 5.229 cm ⁴ /m			Support width 40mm	Web crushing 17.275 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.13	2.31	1.78	1.42	1.16	0.92	0.73	0.59	0.48
double	3.31	2.45	1.88	1.50	1.22	1.02	0.86	0.74	0.65
triple	4.13	3.05	2.34	1.86	1.52	1.26	1.07	0.92	0.80
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.32	1.44	0.94	0.64	0.45	0.32	0.23	0.17	0.12
double	2.40	1.82	1.42	1.11	0.79	0.58	0.43	0.33	0.25
triple	2.93	2.23	1.61	1.11	0.79	0.58	0.43	0.33	0.25
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.27	3.11	2.36	1.85	1.48	1.21	1.00	0.84	0.71
double	3.65	2.77	2.17	1.74	1.39	1.14	0.94	0.79	0.67
triple	4.46	3.40	2.67	2.15	1.76	1.44	1.20	1.01	0.86

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

AS24/1000W WALL PROFILE



A medium profile wall sheet available in 0.5mm and 0.7mm thicknesses. A matching roof profile is available (see page 5 for load span tables).

Table 06: AS24/1000W steel wall profile • Thickness 0.5mm • Weight 4.57 kg/m²

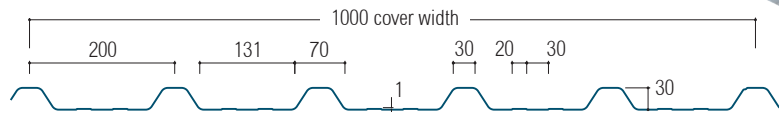
Top flange in compression Moment capacity 0.513 kNm/m Moment of inertia 3.514 cm ⁴ /m		Bottom flange in compression Moment capacity 0.527 kNm/m Moment of inertia 3.514 cm ⁴ /m			Support width 40mm	Web crushing 8.318 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.09	1.54	1.13	0.79	0.58	0.43	0.33	0.26	0.21
double	2.04	1.50	1.15	0.90	0.73	0.61	0.51	0.43	0.37
triple	2.54	1.87	1.43	1.13	0.92	0.76	0.64	0.54	0.47
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.04	1.50	1.13	0.79	0.58	0.43	0.33	0.26	0.21
double	1.71	1.32	1.05	0.86	0.71	0.60	0.52	0.45	0.38
triple	2.07	1.60	1.28	1.05	0.87	0.74	0.63	0.55	0.48

Table 07: AS24/1000W steel wall profile • Thickness 0.7mm • Weight 6.49 kg/m²

Top flange in compression Moment capacity 0.777 kNm/m Moment of inertia 5.229 cm ⁴ /m		Bottom flange in compression Moment capacity 0.823 kNm/m Moment of inertia 5.229 cm ⁴ /m			Support width 40mm	Web crushing 17.275 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.27	2.40	1.67	1.18	0.86	0.64	0.50	0.39	0.31
double	3.08	2.27	1.73	1.37	1.11	0.92	0.77	0.66	0.57
triple	3.85	2.83	2.17	1.71	1.39	1.15	0.96	0.82	0.71
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.08	2.27	1.67	1.18	0.86	0.64	0.50	0.39	0.31
double	2.92	2.24	1.77	1.43	1.18	0.97	0.82	0.70	0.60
triple	3.55	2.73	2.16	1.76	1.46	1.21	1.02	0.87	0.75

PERFORMANCE

AS30/1000R ROOF PROFILE



A deep profile roof sheet available in 0.5mm and 0.7mm thicknesses. The male underlapping sheet edge has a support leg and an anti-syphonic groove. A matching wall profile is available (see page 8 for load span tables).

Table 08: AS30/1000R steel roof profile • Thickness 0.5mm • Weight 4.57 kg/m²

Bottom flange in compression Moment capacity 0.682 kNm/m Moment of inertia 5.958 cm ⁴ /m		Top flange in compression Moment capacity 0.643 kNm/m Moment of inertia 5.943 cm ⁴ /m			Support width 40mm	Web crushing 5.112 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.74	2.02	1.55	1.24	1.01	0.84	0.71	0.61	0.52
double	2.58	1.91	1.47	1.17	0.95	0.79	0.67	0.58	0.50
triple	3.22	2.38	1.83	1.45	1.18	0.98	0.83	0.71	0.62
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.19	1.60	1.10	0.76	0.54	0.39	0.29	0.22	0.17
double	1.36	1.07	0.87	0.72	0.60	0.51	0.44	0.38	0.31
triple	1.62	1.29	1.05	0.87	0.73	0.62	0.52	0.40	0.31
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.34	2.44	1.85	1.45	1.16	0.95	0.79	0.66	0.56
double	2.07	1.64	1.32	1.09	0.91	0.77	0.66	0.57	0.50
triple	2.48	1.96	1.59	1.32	1.11	0.95	0.81	0.71	0.62

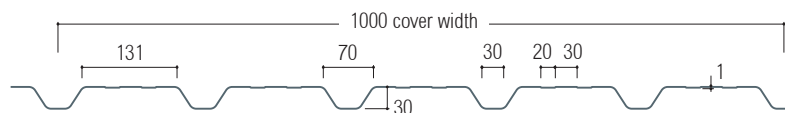
Table 09: AS30/1000R steel roof profile • Thickness 0.7mm • Weight 6.49 kg/m²

Bottom flange in compression Moment capacity 1.054 kNm/m Moment of inertia 9.056 cm ⁴ /m		Top flange in compression Moment capacity 1.11 kNm/m Moment of inertia 9.056 cm ⁴ /m			Support width 40mm	Web crushing 11.483 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.23	3.12	2.40	1.91	1.55	1.29	1.09	0.94	0.79
double	4.45	3.28	2.52	2.00	1.63	1.36	1.15	0.98	0.86
triple	5.55	4.09	3.14	2.49	2.03	1.68	1.42	1.22	1.06
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.80	2.53	1.68	1.16	0.83	0.60	0.45	0.34	0.26
double	2.54	1.97	1.58	1.29	1.07	0.90	0.77	0.61	0.48
triple	3.05	2.38	1.92	1.57	1.31	1.05	0.79	0.61	0.48
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	5.79	4.23	3.22	2.52	2.03	1.66	1.38	1.16	0.99
double	3.86	3.01	2.41	1.97	1.63	1.38	1.17	1.01	0.88
triple	4.65	3.63	2.92	2.39	2.00	1.69	1.45	1.25	1.09

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

AS30/1000W WALL PROFILE



A deep profiled wall sheet available in 0.5 and 0.7mm thicknesses. A matching roof profile is available (see page 7 for load span tables).

Table 10: AS30/1000W steel wall profile • Thickness 0.5mm • Weight 4.57 kg/m²

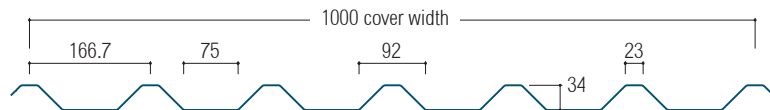
Top flange in compression Moment capacity 0.682 kNm/m Moment of inertia 5.958 cm ⁴ /m		Bottom flange in compression Moment capacity 0.643 kNm/m Moment of inertia 5.943 cm ⁴ /m			Support width 40mm	Web crushing 5.112 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.55	1.87	1.44	1.13	0.92	0.73	0.56	0.44	0.36
double	2.71	1.99	1.52	1.20	0.97	0.81	0.68	0.58	0.50
triple	3.38	2.49	1.90	1.50	1.22	1.01	0.85	0.72	0.62
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.71	1.99	1.52	1.20	0.97	0.73	0.57	0.44	0.36
double	1.56	1.23	1.00	0.83	0.70	0.60	0.52	0.46	0.40
triple	1.85	1.47	1.20	1.00	0.85	0.73	0.63	0.55	0.49

Table 11: AS30/1000W steel wall profile • Thickness 0.7mm • Weight 6.49 kg/m²

Top flange in compression		Bottom flange in compression				Support width 40mm	Web crushing 11.483 kN/m	Young modulus 205 kN/mm ²	
Moment capacity 1.054 kNm/m		Moment capacity 1.11 kNm/m							
Moment of inertia 9.056 cm ⁴ /m		Moment of inertia 9.056 cm ⁴ /m							
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.40	3.24	2.48	1.96	1.49	1.12	0.86	0.68	0.54
double	4.18	3.07	2.35	1.86	1.51	1.24	1.05	0.89	0.77
triple	5.23	3.84	2.94	2.32	1.88	1.56	1.31	1.11	0.96
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.18	3.07	2.35	1.86	1.49	1.12	0.86	0.68	0.54
double	3.05	2.39	1.93	1.59	1.34	1.14	0.98	0.85	0.75
triple	3.65	2.87	2.33	1.92	1.62	1.38	1.19	1.04	0.92

PERFORMANCE

AS34/1000R ROOF PROFILE



A deep profiled roof sheet available in 0.5 and 0.7mm thicknesses. The female overlapping sheet edge has an anti-siphonic groove. A matching wall profile is available (see page 10 for load span tables).

Table 12: AS34/1000R steel roof profile • Thickness 0.5mm • Weight 4.57 kg/m²

Bottom flange in compression Moment capacity 0.846 kNm/m Moment of inertia 6.425 cm ⁴ /m		Top flange in compression Moment capacity 0.945 kNm/m Moment of inertia 8.183 cm ⁴ /m			Support width 40mm	Web crushing 7.484 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.39	2.50	1.92	1.52	1.24	1.03	0.86	0.69	0.56
double	3.78	2.79	2.14	1.70	1.38	1.15	0.97	0.83	0.72
triple	4.72	3.48	2.67	2.12	1.72	1.43	1.20	1.03	0.89
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.24	2.30	1.53	1.06	0.76	0.56	0.42	0.32	0.25
double	1.85	1.45	1.17	0.96	0.80	0.68	0.58	0.51	0.44
triple	2.21	1.75	1.41	1.17	0.98	0.83	0.72	0.57	0.44
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.94	3.61	2.75	2.16	1.74	1.43	1.19	1.00	0.86
double	2.82	2.21	1.78	1.47	1.23	1.04	0.89	0.77	0.67
triple	3.37	2.66	2.15	1.78	1.49	1.27	1.09	0.95	0.83

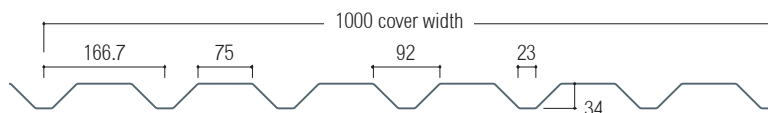
Table 13: AS34/1000R steel roof profile • Thickness 0.7mm • Weight 6.49 kg/m²

Bottom flange in compression Moment capacity 1.367 kNm/m Moment of inertia 10.471 cm ⁴ /m		Top flange in compression Moment capacity 1.539 kNm/m Moment of inertia 12.177 cm ⁴ /m			Support width 40mm	Web crushing 15.758 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	5.47	4.03	3.10	2.46	2.00	1.66	1.39	1.11	0.90
double	6.15	4.53	3.48	2.76	2.24	1.86	1.57	1.35	1.17
triple	7.68	5.65	4.34	3.44	2.79	2.32	1.95	1.67	1.45
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	5.29	3.43	2.28	1.58	1.13	0.84	0.63	0.48	0.37
double	3.39	2.63	2.11	1.72	1.43	1.21	1.03	0.84	0.66
triple	4.07	3.18	2.56	2.10	1.75	1.44	1.09	0.84	0.66
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	8.06	5.90	4.49	3.53	2.84	2.34	1.95	1.65	1.41
double	5.16	4.01	3.21	2.62	2.18	1.84	1.57	1.36	1.18
triple	6.21	4.85	3.90	3.20	2.67	2.26	1.94	1.67	1.46

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

AS34/1000W WALL PROFILE



A deep profiled wall sheet available in 0.5mm and 0.7mm thicknesses. A matching roof profile is available (see page 9 for load span tables).

Table 14: AS34/1000W steel wall profile • Thickness 0.5mm • Weight 4.57 kg/m²

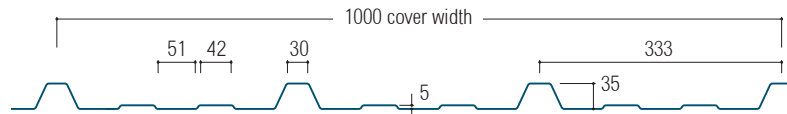
Top flange in compression Moment capacity 0.846 kNm/m Moment of inertia 6.425 cm ⁴ /m		Bottom flange in compression Moment capacity 0.945 kNm/m Moment of inertia 8.183 cm ⁴ /m			Support width 40mm	Web crushing 7.484 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.75	2.76	2.11	1.67	1.34	1.01	0.78	0.61	0.49
double	3.36	2.47	1.89	1.49	1.21	1.00	0.84	0.72	0.62
triple	4.20	3.08	2.36	1.87	1.51	1.25	1.05	0.89	0.77
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.36	2.47	1.89	1.45	1.05	0.79	0.61	0.48	0.38
double	2.28	1.81	1.47	1.22	1.03	0.89	0.77	0.67	0.59
triple	2.72	2.16	1.76	1.47	1.24	1.07	0.93	0.81	0.72

Table 15: AS34/1000W steel wall profile • Thickness 0.7mm • Weight 6.49 kg/m²

Top flange in compression		Bottom flange in compression				Support width 40mm	Web crushing 15.758 kN/m	Young modulus 205 kN/mm²	
Moment capacity 1.367 kNm/m		Moment capacity 1.539 kNm/m							
Moment of inertia 10.471 cm⁴/m		Moment of inertia 12.177 cm⁴/m							
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	6.11	4.49	3.44	2.71	2.00	1.50	1.16	0.91	0.73
double	5.42	3.99	3.05	2.41	1.95	1.61	1.36	1.16	1.00
triple	6.78	4.98	3.81	3.01	2.44	2.02	1.70	1.44	1.25
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	5.42	3.99	3.05	2.36	1.72	1.29	0.99	0.78	0.63
double	4.21	3.30	2.67	2.20	1.85	1.57	1.36	1.18	1.04
triple	5.03	3.97	3.21	2.66	2.23	1.91	1.65	1.44	1.27

PERFORMANCE

AS35/1000 ROOF PROFILE



A deep profile sheet which matches the AS35 insulated panel. Available in 0.5 and 0.7mm thicknesses. AS35/1000 can also be used as a wall profile (see page 12 for load span tables).

Table 16: AS35/1000 steel roof profile • Thickness 0.5mm • Weight 4.57 kg/m²

Bottom flange in compression Moment capacity 0.511 kNm/m Moment of inertia 5.256 cm ⁴ /m		Top flange in compression Moment capacity 0.479 kNm/m Moment of inertia 5.62 cm ⁴ /m			Support width 40mm	Web crushing 4.372 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.06	1.52	1.17	0.93	0.76	0.64	0.54	0.46	0.41
double	1.93	1.43	1.10	0.88	0.72	0.60	0.51	0.44	0.38
triple	2.41	1.78	1.37	1.09	0.89	0.74	0.63	0.54	0.47
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.62	1.18	0.90	0.70	0.51	0.37	0.27	0.21	0.16
double	1.08	0.85	0.68	0.56	0.46	0.39	0.33	0.29	0.25
triple	1.30	1.02	0.82	0.68	0.57	0.48	0.41	0.36	0.29
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.47	1.80	1.36	1.07	0.85	0.69	0.57	0.48	0.40
double	1.65	1.29	1.04	0.85	0.71	0.60	0.51	0.44	0.38
triple	1.98	1.56	1.26	1.03	0.86	0.73	0.63	0.54	0.47

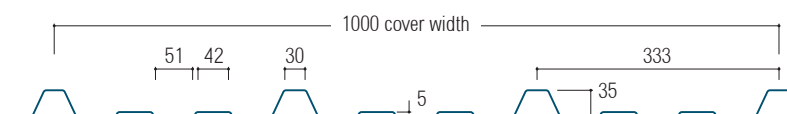
Table 17: AS35/1000 steel roof profile • Thickness 0.7mm • Weight 6.49 kg/m²

Bottom flange in compression Moment capacity 0.793 kNm/m Moment of inertia 8.373 cm ⁴ /m		Top flange in compression Moment capacity 0.832 kNm/m Moment of inertia 8.708 cm ⁴ /m			Support width 40mm	Web crushing 9.082 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.19	2.36	1.82	1.44	1.18	0.98	0.83	0.72	0.62
double	3.35	2.47	1.90	1.51	1.23	1.03	0.87	0.75	0.65
triple	4.17	3.08	2.37	1.88	1.53	1.27	1.08	0.93	0.80
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.83	2.07	1.57	1.11	0.79	0.58	0.43	0.33	0.25
double	1.94	1.50	1.20	0.97	0.81	0.68	0.57	0.49	0.43
triple	2.33	1.82	1.46	1.19	0.99	0.83	0.71	0.59	0.46
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.32	3.15	2.39	1.87	1.50	1.22	1.01	0.85	0.72
double	2.95	2.29	1.82	1.48	1.23	1.03	0.87	0.75	0.65
triple	3.55	2.77	2.22	1.81	1.51	1.27	1.08	0.93	0.81

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

AS35/1000 WALL PROFILE



A deep profile sheet which matches the AS35 insulated panel. Available in 0.5 and 0.7mm thicknesses.

AS35/1000 can also be used as a roof profile (see page 11 for load span tables).

Table 18: AS35/1000 steel wall profile • Thickness 0.5mm • Weight 4.57 kg/m²

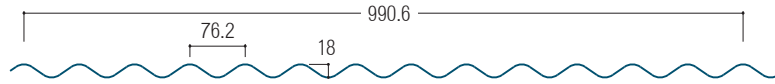
Top flange in compression Moment capacity 0.479 kNm/m Moment of inertia 5.62 cm ⁴ /m		Bottom flange in compression Moment capacity 0.511 kNm/m Moment of inertia 5.256 cm ⁴ /m			Support width 40mm	Web crushing 4.372 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.03	1.49	1.14	0.90	0.73	0.60	0.50	0.39	0.31
double	1.90	1.40	1.07	0.84	0.68	0.57	0.48	0.40	0.35
triple	2.38	1.75	1.34	1.06	0.86	0.71	0.59	0.51	0.44
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.90	1.40	1.07	0.84	0.68	0.57	0.48	0.40	0.34
double	1.28	1.01	0.82	0.68	0.58	0.49	0.43	0.37	0.33
triple	1.53	1.21	0.99	0.82	0.69	0.59	0.52	0.45	0.40

Table 19: AS35/1000 steel wall profile • Thickness 0.7mm • Weight 6.49 kg/m²

Top flange in compression		Bottom flange in compression				Support width 40mm	Web crushing 9.082 kN/m	Young modulus 205 kN/mm ²	
Moment capacity 0.832 kNm/m		Moment capacity 0.793 kNm/m							
Moment of inertia 8.708 cm ⁴ /m		Moment of inertia 8.373 cm ⁴ /m							
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.15	2.31	1.77	1.40	1.13	0.94	0.79	0.63	0.50
double	3.30	2.43	1.86	1.47	1.19	0.98	0.83	0.70	0.61
triple	4.13	3.03	2.32	1.83	1.49	1.23	1.03	0.88	0.76
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	3.30	2.43	1.86	1.47	1.19	0.98	0.83	0.65	0.52
double	2.28	1.78	1.43	1.18	0.99	0.84	0.72	0.63	0.55
triple	2.73	2.14	1.73	1.42	1.20	1.02	0.88	0.76	0.67

PERFORMANCE

AS13/3/990 ROOF PROFILE



A shallow corrugated profile sheet available in 0.5mm and 0.7mm thicknesses. AS13/3/990 can also be used as a wall profile (see page 14 for load span tables).

Table 20: AS13/3/990 steel roof profile • Thickness 0.5mm • Weight 4.57 kg/m²

Bottom flange in compression Moment capacity 0.542 kNm/m Moment of inertia 1.782 cm ⁴ /m		Top flange in compression Moment capacity 0.542 kNm/m Moment of inertia 1.782 cm ⁴ /m			Support width 40mm	Web crushing 7.734 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.85	1.18	0.81	0.58	0.44	0.34	0.27	0.22	0.19
double	2.18	1.61	1.24	0.99	0.81	0.67	0.57	0.47	0.39
triple	2.72	2.01	1.54	1.23	0.98	0.75	0.59	0.47	0.39
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	0.77	0.47	0.30	0.19	0.13	0.09	0.06	0.03	0.02
double	1.31	0.81	0.53	0.36	0.25	0.17	0.12	0.09	0.06
triple	1.31	0.81	0.53	0.36	0.25	0.17	0.12	0.09	0.06
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.81	2.05	1.55	1.21	0.97	0.79	0.66	0.55	0.47
double	2.20	1.69	1.34	1.09	0.89	0.75	0.63	0.54	0.47
triple	2.67	2.06	1.64	1.33	1.10	0.93	0.79	0.68	0.58

Table 21: AS13/3/990 steel roof profile • Thickness 0.7mm • Weight 6.49 kg/m²

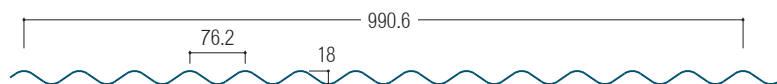
Bottom flange in compression Moment capacity 0.798 kNm/m Moment of inertia 2.652 cm ⁴ /m		Top flange in compression Moment capacity 0.798 kNm/m Moment of inertia 2.652 cm ⁴ /m			Support width 40mm	Web crushing 20.551 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/90							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.75	1.76	1.20	0.86	0.64	0.50	0.40	0.33	0.28
double	3.21	2.37	1.83	1.45	1.19	0.99	0.84	0.70	0.57
triple	4.00	2.95	2.27	1.81	1.46	1.11	0.87	0.70	0.57
Imposed load		Deflection limit L/200							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.14	0.70	0.44	0.29	0.20	0.13	0.09	0.05	0.03
double	1.95	1.20	0.78	0.53	0.37	0.26	0.19	0.13	0.09
triple	1.95	1.20	0.78	0.53	0.37	0.26	0.19	0.13	0.09
Drifting snow load									
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	4.14	3.02	2.29	1.79	1.43	1.17	0.97	0.81	0.69
double	3.90	2.95	2.29	1.79	1.43	1.17	0.97	0.81	0.69
triple	4.78	3.63	2.84	2.26	1.81	1.48	1.23	1.04	0.88

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

AS13/3/990

WALL PROFILE



A shallow corrugated profile sheet available in 0.5mm and 0.7mm thicknesses. AS13/3/990 can also be used as a roof profile (see page 13 for load span tables).

Table 22: AS13/3/990 steel wall profile • Thickness 0.5mm • Weight 4.57 kg/m²

Top flange in compression Moment capacity 0.542 kNm/m Moment of inertia 1.782 cm ⁴ /m		Bottom flange in compression Moment capacity 0.542 kNm/m Moment of inertia 1.782 cm ⁴ /m			Support width 40mm	Web crushing 7.734 kN/m	Young modulus 205 kN/mm ²		
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.35	0.85	0.57	0.40	0.29	0.22	0.17	0.13	0.11
double	2.15	1.58	1.21	0.96	0.70	0.53	0.41	0.32	0.26
triple	2.69	1.98	1.37	0.97	0.70	0.53	0.41	0.32	0.26
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	1.35	0.85	0.57	0.40	0.29	0.22	0.17	0.13	0.11
double	1.70	1.32	1.05	0.86	0.70	0.53	0.41	0.32	0.26
triple	2.05	1.59	1.28	0.97	0.70	0.53	0.41	0.32	0.26

Table 23: AS13/3/990 steel wall profile • Thickness 0.7mm • Weight 6.49 kg/m²

Top flange in compression		Bottom flange in compression			Support width 40mm	Web crushing 20.551 kN/m	Young modulus 205 kN/mm ²		
Moment capacity 0.798 kNm/m		Moment capacity 0.798 kNm/m							
Moment of inertia 2.652 cm ⁴ /m		Moment of inertia 2.652 cm ⁴ /m							
Wind suction		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.01	1.27	0.85	0.60	0.43	0.33	0.25	0.20	0.16
double	3.17	2.33	1.78	1.41	1.05	0.79	0.61	0.48	0.38
triple	3.96	2.91	2.05	1.44	1.05	0.79	0.61	0.48	0.38
Wind pressure		Deflection limit L/120							
Span	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80
single	2.01	1.27	0.85	0.60	0.43	0.33	0.25	0.20	0.16
double	2.99	2.28	1.78	1.41	1.05	0.79	0.61	0.48	0.38
triple	3.65	2.79	2.05	1.44	1.05	0.79	0.61	0.48	0.38

PERFORMANCE

Fragility

When 0.7mm thick AS20 or AS30 liner sheets are installed to Steadmans’ recommendations - using correctly located fixings with 16mm bonded washers, 4mm diameter NFRC class A butyl sealant at the end laps and 50mm x 1mm Polyband air seal / moisture barrier tape at the side laps - the roof is classified as a class B non-fragile assembly, as defined in the ACR(M)001:2005 ‘Test for non-fragility of profiles sheeted roofing assemblies’ (third edition).

When 0.7mm thick external sheet profiles are installed to Steadmans’ recommendations - using correctly located fixings with 16mm bonded washers and 6mm x 5mm NFRC class A butyl sealant at the end and side laps - the roof is classified as a class B non-fragile assembly, as defined in the ACR(M)001:2005 ‘Test for non-fragility of profiles sheeted roofing assemblies’ (third edition).

Durability

The profiles have a predicted service life of 40 years. Time to first maintenance depends upon the finish and the environmental conditions but can be as high as 30 years. Coatings will degrade more rapidly in industrial or coastal air conditions and darker finishes will fade more rapidly than light ones. Table 24 gives the time to first repainting for profiles finished with standard Plastisol colours.

Table 24: Life to first full repainting for plastisol coated profiles

Colours	Wall profiles		Roof profiles	
	Inland	Coastal*	Inland	Coastal*
Group 1	30	25	25	20
Group 2	25	20	20	15

Table based on data from Dobel. Steel from other producers may have different durability values.

*within 1.5 miles from lake or sea shoreline

Service life can be increased by treating site cut edges with site applied touch up paint at the time of cutting and by following the guidance on inspection and maintenance on page 25.

Fire

When tested to BS 476-7:1997 AS roof and wall profiles achieve Class 1 surface spread of flame (Euroclass B), equivalent to Class 0 surface spread of flame as described in Approved Document B. When tested to BS 476-3:2004 the profiles achieve an FAA/SAA rating.

Biological

The profiles are unaffected by mould, fungi and mildew. They do not support vermin.

Colours

Table 25 on page 16 shows available standard profile colours. Special colours are also available, contact Steadmans for more details.

The colours include the nearest British Standard reference for guidance only as the colours vary slightly from British Standard. Due to limitations in printing, colours are for guidance only - specification should be made from an actual sample, available from Steadmans.

- Group 1: Bamboo, Buttermilk, Goosewing Grey, Ivory, Merlin Grey, Moorland Green, Mushroom, New Grey, Olive Green, Pigeon Grey, Wedgwood Blue, White, Willow.
- Group 2: Black, Cornflower Blue, Country Green, Golden Glow, Golden Yellow, Forest Green, Jade, Juniper Green, Linden Green, New Red, Ocean Blue, Pacific Blue, Poppy Red, Saffron, Sage Green, Slate Blue, Terracotta, Tangerine Orange, Vandyke Brown.

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

Table 25: Standard profile colours

	Goosewing Grey* 10A05		Ivory RAL9002		Merlin Grey* 18B25		Moorland Green 12B21
	Mushroom 10B19		Olive Green 12B27		Juniper Green* 12B29		Ocean Blue 18C39
	Slate Blue* 18B29		Terracotta* 04C39		Vandyke Brown* 08B29		White 00E55

*Also available in Polyester coated finish

ACCESSORIES

Gutters

Steadmans manufacture and supply a range of gutters to match the profiles.

Gutters are produced from a variety of materials including pre-galvanised steel (to BS EN 10143:2006) and pre-coated steel, either painted or PVC-coated on one or both sides; aluminium can be supplied to order. Complete gutter systems and accessories can be manufactured to specification, up to 10m long and 3mm thick: contact Steadmans' sales office for details of sizing.

Flashings

Steadmans manufacture a range of flashings to match the profiles in Plastisol leathergrain, polyester, Nova, Scintilla, galvanised, or PVDF finishes. Flashings can be supplied in lengths up to 6m in traditional profiles, or can be shaped to meet special customer requirements.

Sealants

Steadmans supply a range of NFRC Class A butyl sealants, profile foam fillers and expanding foams to enable AS single skin profiles to be sealed to each other and to other building components, so avoiding thermal bridging and air leakage.

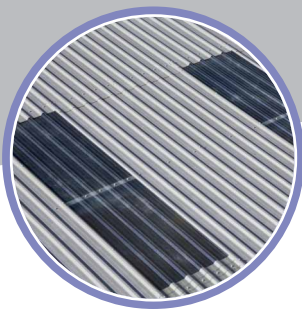
Rooflights

Rooflights can be supplied to meet project requirements for light transmission, durability, non-fragility rating and fire resistance: contact Steadmans' sales office for details.

Table 26: Rooflights

Property	Units	Value
Minimum slope	°	6
Maximum length	m	7
Width (centre-centre)	mm	1000
U-value	W/m ² K	2.2*

* Figures supplied by Brett Martin Daylight Systems Ltd.
Other manufacturer's figures may vary.



Dripstop Drain

Dripstop Drain is a condensation control fleece designed to reduce risk of damage from dripping or running condensate on single-skin metal roofs. Dripstop Drain is available on all Steadmans AS30 and AS13/3 profiles.



Table 27: Drip Stop Drain

Weight	150g/m ²
Thickness	1.7 mm
Roll width (maximum)	1950 mm
Colour	White/black mix
Water absorption - fleece only	700 g/m ²
Water absorption - installed	1900 g/m ²
Drainage after one hour:	
roof pitch 7°	10%
roof pitch 10°	>15%
roof pitch 25°	>40%

The problem of condensation

Uninsulated roofs with single-skin metal sheeting are likely to suffer from condensation when the metal sheeting is cooled during the winter, or on cold clear nights. When warm air within the building cools on contact with the metal sheeting it can not support the same quantity of water vapour and may become saturated, with any excess water vapour condensing on the underside of the sheeting.

The condensate can drip from the roof, wetting the building's fittings and/or contents, or may run down the roof and collect elsewhere within the building fabric where it can cause rust, rot or damage to fittings.

The Dripstop Drain solution

Dripstop Drain is a self-adhesive polyester fleece designed to be applied to single-skin metal roof panels to prevent damage from condensation.

Dripstop Drain:

- slows the formation of condensate by insulating the sheeting;
- prevents condensate dripping from the underside of the roof;
- drains condensate safely down the slope of the roof to a gutter.

Dripstop Drain is intended for roofs of 7° pitch or greater: the drainage rate is greater on steeper pitches.

Dripstop Drain consists of a woven polyester fleece with self-adhesive polyethylene film backing. Dripstop Drain does not support the growth of bacteria and moulds.

Dripstop Drain is applied to AS30 and AS13/3 sheeting during the manufacturing process. For further information on specifying Dripstop Drain please call our Technical Department on 01697 478 277 or email support@steadmans.co.uk.

Dripstop Drain can be cleaned by pressure washing.

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

DESIGN GUIDANCE

Structure

AS single skin systems are designed to be supported by steel or timber purlins. Roof profiles are usually laid with the broad valley resting on the purlin: wall profiles will usually have the narrow valley against the side rail. All 0.7mm thick trapezoidal profiles are suitable for spanning purlins at 1.8m centres. Consult Steadmans' Technical Department for guidance on using the profiles on purlins at centres greater than 1.8m. Steelwork for single skin systems should be within the tolerances given in BS EN 1090-2:2008+A1:2011: fixing planes on adjacent purlins should be less than $L/600$ apart (where L is the purlin spacing). AS sheets should be isolated from preservative treated timber purlins by PVC barrier tape applied to the bearing face of the purlins.

Fixings

Fixings for roof profiles provide restraint against wind uplift forces; those for wall profiles provide restraint and support. Whilst profiles may be fixed through valleys or crowns, Steadmans recommend valley fixing: accurate fixing is easier to achieve, loads on the fixings are smaller, the fixings are less likely to distort the profile, and better compression of the sealant is achieved at end laps.

Fixings should be stainless steel or carbon-steel self drilling screws, have press-on or integral caps to match the colour of the profile and a 16mm diameter EDPM washer to prevent water penetration.

Fixings to light and heavy section steel should pass through the steel and leave 5mm of thread exposed on the underside of the section. Fixing to timber must achieve a minimum 40mm embedment.

AS30 roof profile

standard fixing position

lapped joint fixing position

eaves fixing position

AS24 & AS34 roof profiles

standard fixing position

lapped joint fixing position

eaves fixing position

AS30 wall profile

standard fixing position

lapped joint fixing position

AS24 & AS34 wall profiles

standard fixing position

lapped joint fixing position

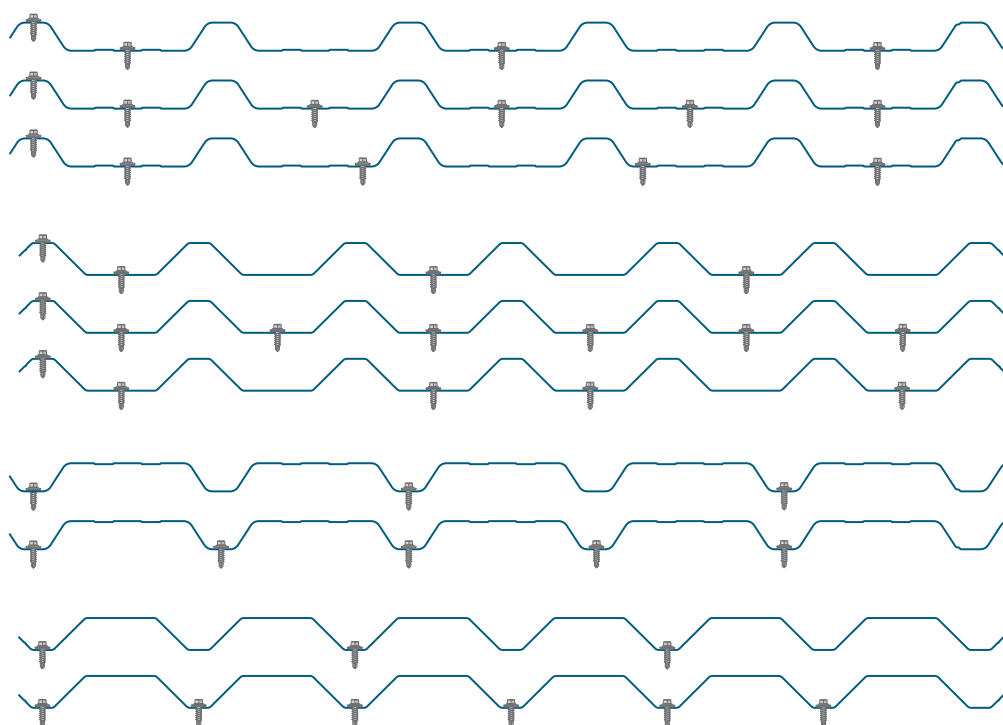


Figure 01: Fixing positions for roof and wall profiles - to achieve optimum sealant compression

DESIGN GUIDANCE

Weather sheets should be fixed directly to the purlins. Each weather sheet requires three fixings (in alternate valleys) at intermediate purlins, four fixings at the eaves and one fixing in each valley at laps. Consult Steadmans' Technical Department for guidance on fixing sheets in extreme exposure conditions.

AS13/3/990 corrugated profiles should be fixed through the crowns of the corrugations. Profiles should be fixed at every second crown at each end (including laps), and at every third crown over intermediate purlins: stagger the fixing pattern across multiple intermediate purlins (there must be a fixing in each side lap).

Laps

Side laps between sheets are formed by lapping the female side of one sheet over the male crown of the adjacent sheet. The exposed edge of the lap should face away from the prevailing wind.

Side laps of weather sheets should be sealed with butyl sealant strip 6mm wide by 5mm high. Weather sheet side laps on roofs should be stitched with 23mm long self drilling screws at 450mm centres.

End laps are required in roofs with two or more tiers of sheets. End laps are formed by lapping the upper weather sheet 150mm over the lower sheet. End laps of weather sheets should be sealed with two runs of butyl sealant strip 6mm wide by 5mm high applied 10 - 15mm from each end of the lap and fixed with 25mm fasteners.

Note: the ends of all metal and GRP weather sheets should extend a minimum of 50mm beyond the fixing line.

Side laps between rooflights and AS weather sheets should be sealed with 6mm wide by 5mm high butyl sealant and stitched with 23mm self drilling fixings or laplocks (see figure 03). End laps should be sealed with two runs of 8mm diameter butyl sealant applied 10 - 15mm from each end of the lap. Where four sheets overlap additional runs of butyl sealant are required between the male and female crowns of all four sheets.

Rooflights can be lapped over the metal sheets on both sides to facilitate fixing if required.

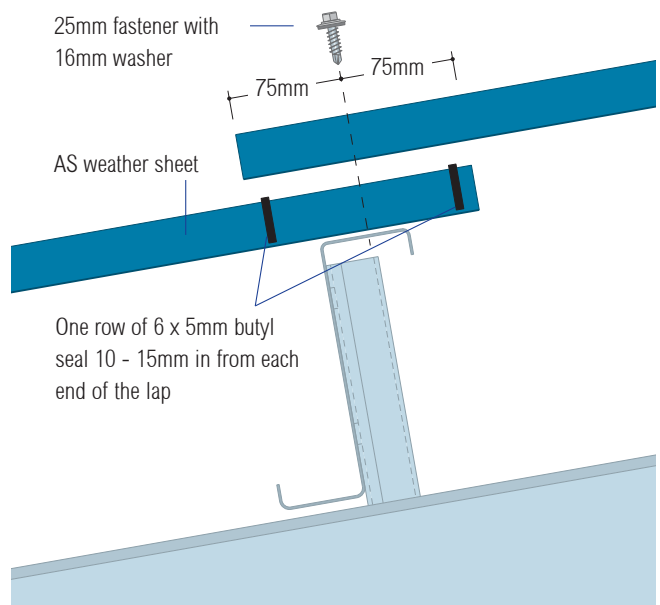


Figure 02: End lap fixing details - roof profiles

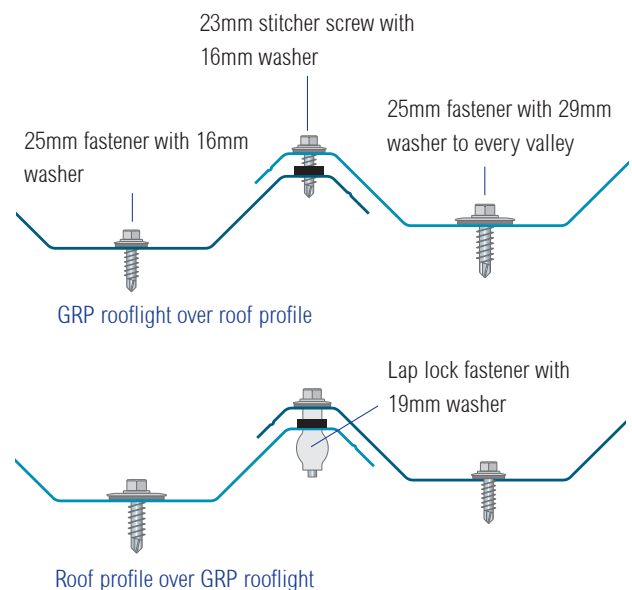


Figure 03: GRP rooflight side laps

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

DESIGN GUIDANCE

Control of condensation

Part C2 of the Building Regulation requires designers to prevent harmful condensation forming on or within building elements. To minimise the risk of condensation designers should arrange for the extraction at source of moisture generated by activities and processes within the building and adopt forms of construction which will not trap moisture within building elements. Designers should observe the guidance in BS 5250:2011.

The high vapour resistance of the sheets and the correct application of butyl seal at sheet junctions will inhibit interstitial condensation. Designers should assess the risk of interstitial condensation using the method in BS EN 13788:2002 and the guidance in BS 5250:2011.

Rooflights

Illuminance: the area of rooflights required to illuminate the building interior depends upon the type of activities taking place. BS 8206-2:2008 Code of practice for daylighting gives guidance. Table 28 shows how to achieve the recommended levels.

Solar gain: designers are required to ensure solar gains in summer will not be excessive. TM37 contains guidance and calculation methods.

Safety: rooflights must provide safety levels appropriate to the frequency of roof access. All Steadmans rooflights offer a non-fragility rating of class B on installation. However, for standard 2.4kg gauge rooflights that level of non-fragility may not be maintained over their 25 year service life. Where rooflights must be non-fragile throughout their service life Steadmans recommend the use of 3.0kg gauge rooflights. Consult Steadmans for further guidance.

Table 28: Rooflight areas

Characteristics of activity / interior	Level of illuminance req. (lux)	Recommended min. rooflight area (% of floor area)
Interiors used occasionally, with visual tasks confined to movement and limited perception of detail e.g. bulk stores	100	10%
Continuously occupied interiors, with visual tasks not requiring perception of detail e.g. loading bays, plant rooms	200	10%
Moderately difficult visual tasks, colour judgement may be required e.g. sports and assembly halls, packing, general offices, engine assembly, retail shops	300 - 500	13% - 15%
Difficult visual tasks, accurate colour judgement required e.g. drawing offices, inspection, electronic assembly	750 - 1000	17% - 20%

*Table based on research by Institute of Energy and Sustainable Development, De Montford University for illuminance in the horizontal plane - rooflight area should be greater where illumination is needed in the vertical plane e.g. where vertical racking is used.

** Figures for the level of illuminance required are taken from CIBSE Guide A (table 1.12)

SITework

Handling and storage

AS profiles are delivered to site in packs. Packer sheets are used at the bottom of the packs to provide protection and the ends of the packs are wrapped with plastic. Maximum pack weight is 2 tonne.

The packs can be off-loaded directly to the roof, or to a storage area, which should be dry and well away from traffic. Packs may be stacked using suitable wooden bearers and packers. Bearers should be placed above each other.

Handle AS profiles carefully to avoid marking weather sheets. Lift sheets from the pack - do not drag them. Observe site health and safety procedures and the results of manual handling and other assessments.

Preparation

Before fixing any sheets check the squareness and accuracy of the steelwork. Determine the direction of the prevailing wind. Check sheets for damage before fixing.

Installation

Roofs - general sequence

Observe the general installation sequence:

1. Lay and fix weather sheet (see laying sequences for sheets below).
2. Fix flashings. Use foam filler pieces and butyl sealant to form weather tight junctions.



SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

SITework

Roofs - single tier laying sequence

The following sequence applies to weather sheets on single tier roofs:

1. Lay the first sheet with the female edge to the gable, away from the prevailing wind. Use a string line to lay the sheet straight and true. Fix the sheet.
2. Apply butyl sealant along the top of the male crown. The surfaces receiving the sealant must be dry: joints in the sealant must be lapped by 25mm not butted.
3. Lay the second sheet with its female crown over the male crown of the first sheet. Fix the sheet.
4. Stitch the lap with self-drilling fixings.
5. Continue to lay sheets across the roof, checking the alignment of the sheeting and correcting any deviations.

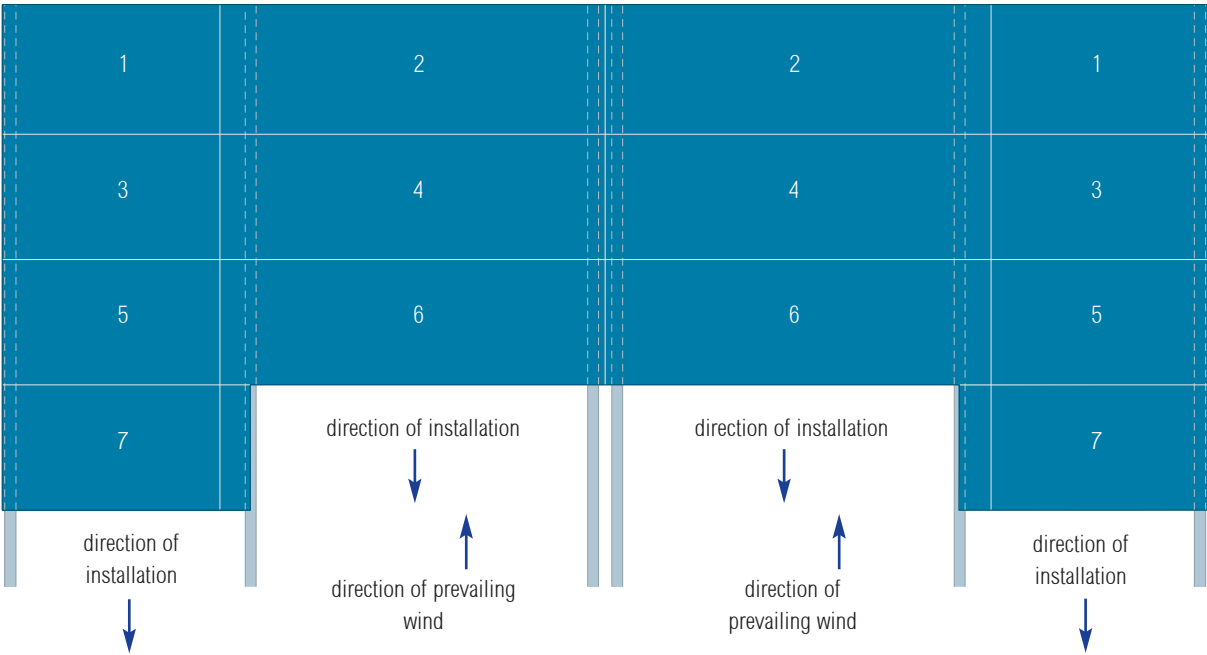


Figure 04: Roof sheet laying sequence

SITWORK

Roofs - double tier laying sequence - weather sheets

On a double tier roof lay the weather sheets in the order shown in figure 04.

1. Lay weather sheet one with the female edge to the gable, away from the prevailing wind. Use a string line to lay the sheet straight and true. Fix the sheet at every purlin except the top one.
2. Apply two runs of 6 x 5mm butyl sealant to the head of weather sheet one and a run of butyl sealant to the male crown for the length of the lap (figure 05).
3. Lay weather sheet two with its female edge to the gable and the tail lapping the head of sheet one. Fix the sheet.
4. Apply a run of butyl sealant to the male crown of sheets one and two (figure 06).
5. Lay weather sheet three with its female crown lapping the male crown of sheet one. Fix the sheet at every purlin except the top one.
6. Stitch the side lap with self-drilling fixings.
7. Apply two runs of 6 x 5mm butyl sealant to the head of weather sheet three and a run of butyl sealant to the male crown for the length of the lap. Ensure the sealant laps the run on the male crown of sheet two (figure 07).
8. Lay weather sheet four with its female crown lapping the male crown of sheet two and its tail lapping the head of sheet three. Fix the profile.
9. Stitch the side lap with self-drilling fixings.
10. Continue to lay the sheets along the roof, checking the alignment of the sheeting and correcting any deviations.

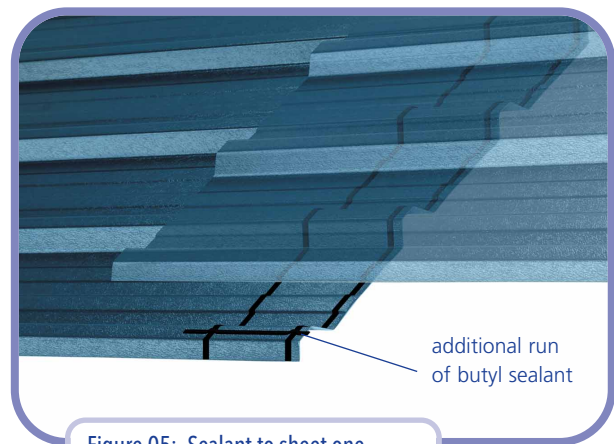


Figure 05: Sealant to sheet one



Figure 06: Sealant over sheets one & two

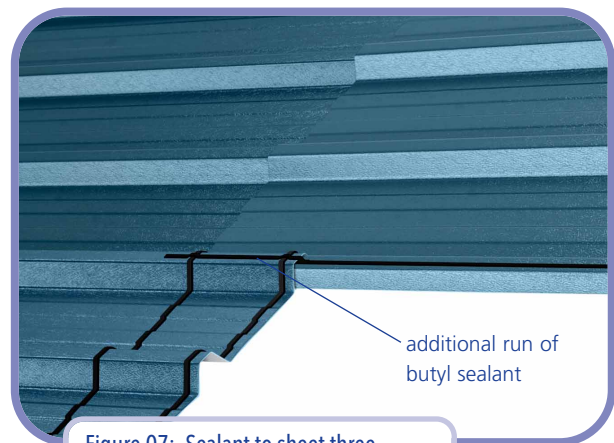


Figure 07: Sealant to sheet three

SINGLE SKIN SYSTEMS

AS SERIES ROOF & WALL PROFILES

SITework

Walls - general sequence

Observe the general installation sequence:

1. Fit and fix weather sheets (see sequences for weather sheets on page 23).
2. Fix flashings. Use foam filler pieces and butyl sealant to form weather tight junctions.

Walls - laying sequence

The following sequence applies to weather sheets on walls:

1. Set sheet one upright against the framing at the corner of the building with the female edge to the corner. Make sure the profile is vertical.
2. Fix with one fixing in alternate valleys at each rail.
3. Apply a run of butyl sealant along the male crown.
4. Set sheet two upright with its female edge lapping the male edge of sheet one.
5. Fix the sheet.
6. Stitch the lap with self-drilling fixings
7. Continue to lay sheets along the wall, checking the alignment of the cladding and correcting any deviations.

Cutting profiles

Where profiles have to be cut on site:

- Use a powered reciprocating saw or circular saw. Do not use an abrasive wheel.
- Support the profile along the line of the cut.
- Protect the pre-coated finishes of the profile.
- Clean any swarf or debris from the pre-coated finish of the profile immediately.

Completion

When all the sheets have been installed check:

- All fixings are correctly fitted and tightened;
- The fixings do not distort the profile;
- All fixing caps are fitted;
- Minor scratches have been treated;
- The surface of the roof is clean and free of any swarf or debris.



MAINTENANCE

Annual inspection

It is good practice to carry out annual inspection of the building exterior and to carry out any remedial work identified during the inspection, see table 29.

Touch-up

Minor scuffing of the colour coating should not be treated. Deeper scratches which reach the substrate should be repaired with touch-up paint.

The touch-up paint should only be applied to the original scratch using a fine paint brush. As touch-up paint will dry to a slightly different colour than the original coating the area which is touched up should be kept as small as possible.

SUPPLY AND DELIVERY

AS Single Skin profiles are available directly from Steadmans. AS Single Skin profiles are supplied banded and in a protecting profiled packing sheet: fully timber crated packs are available for sea freight shipping at additional cost.

AS Single Skin profiles are usually delivered to site. Off loading is the responsibility of the customer. Delivery by self off-load vehicles can be arranged.

Table 29: Checklist for annual inspection

Check for:	Remedial action:
Blocked gutters, which may cause overflow into the building.	Clean gutters and wash out any blockage.
Build-up of debris, which can retain water and cause corrosion.	Remove debris.
Dirt retention on areas not washed by rainwater: that affects the appearance of the building and, if left untreated, could cause the coating to breakdown.	Wash down with fresh water using a hose and soft bristle brush. Heavy deposits can be removed with a solution of water and household detergent or proprietary cleaner.
Mould growth, which is rare, but can affect the appearance of the building.	Wash down, then apply a cleansing solution: consult Steadmans Technical Department for guidance.
Local damage - breakthrough of the panel coating could result in corrosion of the substrate.	Assess the extent of the damage and either touch up (see opposite) or over-paint the affected area or replace damaged sheets.
Drilling swarf and fixing debris.	Remove debris.
Condition of fixings - faulty fixings can cause leaks or rust staining on the surface of the panels.	Replace faulty fixings and missing clips.
Corrosion of cut edges.	Cut or abrade edges back to clean bright metal and repaint: consult Steadmans Technical Department for guidance.

TECHNICAL SUPPORT

Steadmans offers comprehensive technical support to designers and contractors working with AS profiles, including:

- technical brochures and data sheets for all Steadmans products
- CAD details
- copies of test certificates
- loading calculations
- design and installation guidance

Our web site offers full product and application information and downloads of construction details in AutoCAD and PDF formats.

www.steadmans.co.uk

To contact our Technical Department:

- telephone: 01697 478 277
- fax: 01697 478 530
- email: support@steadmans.co.uk

REFERENCES

- Approved Documents
 - A Structure
 - B Fire safety
 - C Site preparation and resistance to contaminants and moisture.
 - L2A Conservation of fuel and power in new buildings other than dwellings.
 - L2B Conservation of fuel and power in existing buildings other than dwellings.
- The Scottish Building Standards: Technical Handbook - Non-domestic.
- BS 476 Fire tests on building material and structures.
 - BS 476-3:2004 Classification and method of test for external fire exposure to roofs.
 - BS 476-7:1997 Method of test to determine the classification of the surface spread of flame of products.
 - BS 476-22:1987 Methods for determination of the fire resistance of non-loadbearing elements of construction.
- BS 5250:2011 Code of practice for control of condensation in buildings.
- BS EN 1090-2:2008+A1:2011 Execution of steel structures and aluminium structures. Technical requirements for steel structures.
- BS 8206 Lighting for buildings.
 - BS 8206-2:2008 Code of practice for daylighting.
- BS EN 10143:2006 Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape.
- BS EN 10346:2009 Continuously hot-dip coated steel flat products. Technical delivery conditions.
- BS EN 12056 Gravity drainage systems inside buildings.
 - BS EN 12056-3:2000 Roof drainage, layout and calculation.
- BS EN ISO 10211:2007 Thermal bridges in building construction. Heat flows and surface temperatures. Detailed calculations.
- BS EN ISO 13788:2012 Hygrothermal performance of building components and building elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation methods.
- MRCMA Technical paper 14. Guidance for the design of metal roofing and cladding to comply with Approved Document L2: 2001
- TM 37: Design for improved solar shading. 2006

Steadmans are always happy to provide advice on the specification of our single skin system and all of our other products for refurbishment and new build projects.



Whatever the nature, size and location of your project, we can provide the expertise and delivery schedules essential to its success.



With more than £3 million of stock available for immediate delivery, Steadmans have built up an enviable reputation for providing quality products, promptly and at competitive prices - a service which has attracted many loyal customers.



Our dedicated fleet of delivery vehicles with self off-load facilities also means that the personal care taken to produce our high quality products is maintained throughout the stages of manufacture to the final delivery to our customer.



A. Steadman & Son

England & Wales

Warnell, Welton
Carlisle
Cumbria
CA5 7HH

Tel: 01697 478 277

Fax: 01697 478 530

Northern Ireland & Ireland

6 - 8 Balmoral Road,
Balmoral Industrial Estate
Belfast, Co Antrim
Northern Ireland BT12 6QA

Tel: 02840 660 516

Fax: 02840 660 517

Scotland

New Edinburgh Road
View Park
Uddingston
G71 6LL

Tel: 01506 437 753

Fax: 01506 440 716

Mill of Crichtie
Fyvie, Turriff
Aberdeenshire
AB53 8QL

Tel: 01651 891 668

Fax: 01651 891 698

E-mail: info@steadmans.co.uk

Online: www.steadmans.co.uk

ENVIRONMENTAL CREDENTIALS

We recognise the need to manage the impact which our business and processes have on the environment.

We believe we have a responsibility to contribute to the well-being of the communities we live in.

We are committed to providing a clean, safe environment.

Developing sustainable construction methods presents a challenge to the whole construction industry.

Our main raw material, steel, is eminently recyclable: 85 - 90% of steel from demolition goes for re-use and 40% of steel used in new construction has been recycled.

By using modern machinery and upgrading our facilities we are continually reducing the impact of our products on the environment, and improving their contribution to the long-term performance of buildings.

www.steadmans.co.uk

