

ENVIRONMENTAL PRODUCT DECLARATION

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PLATE METAL PANELS (AP)

Prepared by Protean Construction Products

Date of Issue: January 26, 2021



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Protean – Plate Metal Panels (AP)

Company Information:

Protean Construction Products provides custom manufactured architectural metal wall panel systems tailored to meet your project's needs – both the design concept and the pragmatic needs of construction. With a passion for teaming with our customers to create great buildings that last, Protean is committed to providing products that make your building more sustainable through the use of recycled materials, ability to recycle the metal wall panels at end of use, and other aspects of the product and our manufacturing processes.

Name and location of production site:
Protean Construction Products, Inc.
11901 Riverwood Dr.
Burnsville, MN 55337
952•895•4000
952•895•1691 (Fax)
info@protean.com
protean.com

Product Information:

Product Name: Plate Metal Panel (AP)

Product Identification: AP-2500RS (Metal Plate Rainscreen Panels), AP-2000RS (Metal Plate Rainscreen Panels), AP-1125 (Wet Joint Metal Plate Panels)

Geographic Scope: USA

Product Description:

The AP-2500RS Series is a formed plate, back-ventilated rainscreen panel system, which provides a smooth joint with caulk free edges. AP panel systems are best used in applications that go down to grade, or as accents with low volume custom colors. The AP-2500RS is our most easily installed plate system, due to an integrated drainage channel. Minimal service requirements result in economical cost over the service life of your project.

The AP-2000RS Series is a formed plate, back-ventilated rainscreen panel system, which provides a smooth joint with caulk free edges with tucked and tack welded corners. AP panel systems are best used in applications that go down to grade, or as accents with low volume custom colors. The AP-2000RS is our most economical plate system for the service life of your project based upon low initial product cost and minimal service cost.

The AP-1125 Series is a formed plate barrier system, which provides a smooth joint with welded and ground corners. AP panel systems are best used in low rise applications that go down to grade, or as accents with low volume custom colors. The AP-1125 system is the best fit for projects with multiple bends, and shapes and conditions where long service life is desired.

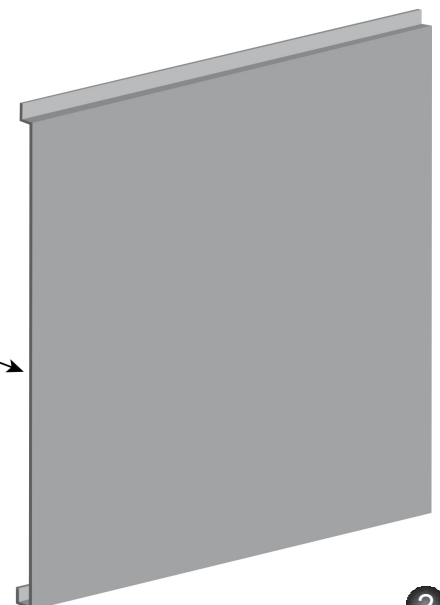
Plate Metal Panels (AP), when either the AP-2500RS Standard Construction, AP-2000RS Standard Construction, or the AP-1125 Standard Construction is Basis of Design, provide a warranty of 5 Year Workmanship and 20 year finish.

Other codes for product classification: AP

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AP-2500RS PANEL

METAL SKIN



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Content Declaration

Product

Component	Material	Availability	Origin	Mass (%)
Aluminum face	Aluminum, hot rolled	Fossil resource, limited	North America	100
Aluminum face	Primary Aluminum (including alloy agents)	Fossil resource, limited	North America	34
Aluminum face	Recovered Aluminum from Other Post-Industrial Scrap	Fossil resource, limited	North America	26
Aluminum face	Post-Consumer Scrap	Fossil resource, limited	North America	40

Recycled Material

Provenience of recycled materials (pre-consumer or post-consumer) in the product:

Pre-consumer recycled content: 66%

Post-consumer recycled content: 85%

Environmental Performance

Potential environmental impact

PARAMETER (per metric ton)	UNIT	
Global warming potential (GWP)	kg CO ₂ -eq.	3,930
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11-eq.	2.6E-7
Acidification potential (AP)	kg SO ₂ -eq.	22.65
Eutrophication potential (EP)	kg N-eq.	0.4257
Smog formation potential (SFP)	kg O ₃ -eq.	187
Abiotic Depletion Potential – Elements (ADP-elements)	kg Sb-eq.	2.26E-3
Abiotic Depletion Potential – Fossil Fuels (ADP-fossil fuels)	MJ	43,600

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Environmental Performance

Use of resources

PARAMETER (per metric ton)	UNIT	
Primary energy resources – Renewable	MJ, net calorific value	18,100
Primary energy resources – Non-renewable	MJ, net calorific value	43,600
Secondary materials	kg	722
Net use of fresh water	m ³	137,000

Waste production and output flows

Waste production

PARAMETER (per metric ton)	UNIT	
Hazardous waste disposed	kg	984
Non-hazardous waste disposed	kg	92
Radioactive waste disposed	kg	2.61
Materials for recycling	kg	11.5

Additional Information:

End of Life Stage:

The AP-2500RS, AP-2000RS, and AP-1125 are composed of 100% recyclable aluminum with the exception of finish. Therefore, AP panels can be placed directly into a recycling stream.

Release of Dangerous Substances:

There is no release of dangerous substances from plate metal panel systems during the use stage. An exception, however, may be the “off gassing” of caulk sealant for AP-1125 panels.



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Additional Information:

Installation and Energy Efficiency:

Energy consumption using Aluminum Plate panels is optimized by attachment methods that eliminate/minimize thermal bridging. The proper installation of plate metal panels is as follows. Firstly, utilizing standard installation details, AP-2500RS series panels are sequentially installed to the structure with mechanical fasteners as a rainscreen system. The panel system utilizes an integrated drainage channel for ease of installation. We recommend use of hat girts and self-tapping screws; however, our panels can be fastened to flat strap furring or direct to 5/8" or heavier plywood. Panel system must be backed by and requires proper Air/Water barrier to be designed and installed as with any rainscreen panel system. Secondly, utilizing standard installation details, AP-2000RS series panels are sequentially installed to the structure with mechanical fasteners as a rainscreen system. The panel system utilizes a back drainage channel of like material. We recommend use of hat girts and self-tapping screws; however, our panels can be fastened to flat strap furring or direct to 5/8" or heavier plywood. The panel system must be backed by and requires proper Air/Water barrier to be designed and installed as with any rainscreen panel system. Thirdly, utilizing standard installation details, AP-1125 series panels are sequentially installed to the structure with mechanical fasteners and formed attachment legs. The minimum joint of 1/2" is sealed with backer rod and sealant compatible with the finish. We recommend use of hat girts and self-tapping screws; however, our panels can be fastened to flat strap furring or direct to 5/8" or heavier plywood. Optional design with attachment clips allows non-sequential installation so panels can be installed or removed individually. Optional free-floating design for seismic consideration (AP-2125) is sequentially installed with stainless steel alignment pins through slotted side joint on an extended attachment leg.

References

The Alumni Association Environmental Product Declaration for Hot-Rolled Aluminum Manufactured in North America

TRACI 2.0 Bare, J. "TRACI 2.0: the Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts 2.0." Clean Technologies and Environmental Policy. Volume 13, Number 5, 687-696. 2011.

CML 2001 Guinée et al. "An operational guide to the ISO-standards (Centre for Milieukunde (CML), Leiden 2001." Center for Environmental Sciences (CML) at the University of Leiden, The Netherlands. Last Updated 2010.