STAINLESS STEEL FOR BUILDING EXTERIORS

A DESIGNERS’ HANDBOOK SERIES

№ 9010

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STAINLESS STEEL FOR BUILDING EXTERIORS

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Material presented in the handbook has been prepared for the general information of the reader and should not be used or relied on for specific applications without first securing competent advice.

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Stainless Steels for Building Exteriors

Introduction

Stainless steel is not just another material to hang on the outside of a building. It’s something special.

Stainless steel is a material that will last a lifetime, whether the time span be 50, 75 or 100 years. In normal service it will not blister, peel or spall.

Stainless steel is a material that retains its appearance with minimum maintenance. Rain washes away gross accumulation of dirt and grime; but if cleaning is ever necessary, detergent and water or almost any commercial metal cleaner will do a superb job.

The appearance of stainless steel on a building exterior takes many forms. It can reflect a blue sky or golden sunset. It blends with and compliments wood, stone, metal and masonry. It’s fresh, light, strong, or delicate; it can be mirror reflective or dull matt.

Stainless steel is practical for high rise, low rise, industrial or commercial. It’s readily available, fabricable, and economical. Stainless steel is both decorative and functional. Long recognized for attractive appearance, stainless steel also can serve as a principal structural element. Consider, for example, that a flat stainless steel membrane, 1/16 of an inch thick, provides the complete roof structure covering an area 240 by 300 feet. (See page 32).

On the following pages are 15 outstanding examples of stainless steel for building exteriors.

Judge for yourself.

Buildings in Order of Appearance

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Homestead Federal Savings & Loan Association
Dayton, Ohio

Architect:
Levin Porter Associates
Dayton, Ohio

Curtain Wall:
Overly Manufacturing Company
Greensburg, Pennsylvania

STAINLESS STEEL MATERIAL SPECIFICATION

Type:
304

Thickness:
0.109 in. (2.76mm)

Finish:
No. 4

Note: Stainless steel is indicated in red.
STAINLESS STEEL MATERIAL SPECIFICATION

Type:
304

Thickness:
Exterior Panels-0.063 in. (1.6mm)
Copings and Other Trim-0.031 in. (0.78mm)

Finish:
No. 2B
Kuwait Chancery
Washington, D.C.

Architect:
Skidmore, Owings & Merrill New
York, New York

Wall Panels and Column Covers:
Canadian Rogers Eastern, Ltd.
Toronto, Ontario

STAINLESS STEEL
MATERIAL SPECIFICATION

Type:
304

Thickness:
0.109 in. (2.76mm)

Finish:
Imperial
Contemporary Arts Museum
Houston, Texas

Architect:
Gunnar Birkerts and Associates
Birmingham, Michigan

STAINLESS STEEL MATERIAL SPECIFICATION

Type:
304

Thickness:
0.037 in. (0.94mm)

Finish:
Special Embossed

Horizontal Cross Section

Vertical Section
STAINLESS STEEL MATERIAL SPECIFICATION

Curtain wall is a laminated panel with stainless steel face and balance sheets. Core is aluminum. Curved panel is stainless steel with aluminum stiffeners.

**Type:**
304

**Thickness:**
- Face Sheet - 0.038 in. (0.96mm)
- Balance Sheet - 0.019 in. (0.48mm)
- Curved Panel - 0.078 in. (1.98mm)

**Finish:**
- Face Sheet - No. 4
- Balance Sheet - No. 2
- Curved Panel - No. 4
STAINLESS STEEL
MATERIAL SPECIFICATION

Type:
304

Thickness:
Outer Panels - 0.312 in. (0.79mm)
Ridge Caps - 0.0312 in. (0.79mm)
Crows Beaks - 0.625 in. (1.58mm)
Soffits - 0.0312 in. (0.79mm)

Finish:
Outer Panels - Ezeform 35
Ridge Caps - XL Blend S
Crows Beaks - Imperial
Soffits - Imperial
Royal Bank Plaza
Toronto, Ontario

Architect:
The Webb Zerafa Menkes
Housden Partnership
Toronto, Ontario

Curtain Wall:
P.P.G. Industries Canada, Ltd.
Toronto, Ontario

STAINLESS STEEL MATERIAL SPECIFICATION

Type:
304

Thickness:
Mullion Covers-0.031 in. (0.78mm)
Spandrel Panels-0.062 in. (1.57mm)

Finish:
XL Blend S
Burdine’s
Tampa, Florida

Architect:
Reynolds, Smith and Hills
Tampa, Florida

Curtain Wall:
H. H. Robertson Company
Pittsburgh, Pennsylvania

STAINLESS STEEL MATERIAL SPECIFICATION
Composite panel has stainless steel face sheet and galvanized steel balance sheet. Urethane core is factory foamed.

Type:
304

Thickness:
Face Sheet - 0.038 in. (0.96mm)

Finish:
No. 4
Veterans Administration Hospital
Augusta, Georgia

Architect:
Abreu and Robeson, Inc.
Atlanta, Georgia

Curtain Wall:
H. H. Robertson Company
Pittsburgh, Pennsylvania

STAINLESS STEEL MATERIAL SPECIFICATION
Curtain wall is a composite panel with stainless steel face and balance sheets. Urethane core is factory foamed.

Type:
304

Thickness:
Face Sheet - 0.040 in. (1.01 mm)
Balance Sheet - 0.020 in. (0.50mm)

Finish:
Face Sheet - No. 4
Balance Sheet - No. 2
Ironworkers Building
Pittsburgh, Pennsylvania

Architect:
Klaus Associates Architects
Pittsburgh, Pennsylvania

Curtain Wall:
H.H. Robertson Company
Pittsburgh, Pennsylvania

STAINLESS STEEL MATERIAL SPECIFICATION
Curtain wall is laminated panel with stainless steel face and liner sheets. Core is honeycomb, phenolic resin impregnated Kraft paper.

Type:
304

Thickness:
Face Sheet-0.040 in. (1.01 mm)
Balance Sheet-0.020 in (0.50mm)

Finish:
Face Sheet - No. 4
Balance Sheet - No. 2
Nova, an Alberta Corporation Head Office Building
Calgary, Alberta

Owner:
Novalta Properties Ltd.
Calgary, Alberta

Architect:
J.H. Cook, Architects & Engineers
Calgary, Alberta

Curtain Wall:
Kawneer Company Canada, Ltd.
Scarborough, Ontario

STAINLESS STEEL MATERIAL SPECIFICATION

Type:
304

Thickness:
Exterior Panels - 0.125 in. (3.17mm)
Mullion Caps - 0.032 in. (0.81 mm)
Louvers - 0.062 in. (1.57mm)
Coping - 0.062 in. (1.57mm)

Finish:
Exterior Panels - Imperial
Mullion Caps - Imperial
Louvers - Imperial
Coping - Imperial
C.I.L. House
Toronto, Ontario

Architect:
Shore Tilbe Henschel Irwin Peters
and
Associated Architect Stanley Kwok
Toronto, Ontario

Curtain Wall:
Antamex Limited
Toronto, Ontario

STAINLESS STEEL
MATERIAL SPECIFICATION

Type:
304

Thickness:
0.109 in. (2.76mm)

Finish:
Imperial
STAINLESS STEEL MATERIAL SPECIFICATION
Curtain wall is a laminated panel with stainless steel face and back sheets. Core is cellular aluminum.

**Type:**
304

**Thickness:**
- Face Sheet: 0.038 in. (0.96mm)
- Back Sheet: 0.019 in. (0.55mm)

**Finish:**
- Face Sheet: No. 4
- Back Sheet: No. 2

Architect:
3/D International Houston, Texas

Curtain Wall:
Cupples Products Division
H. H. Robertson Company
Pittsburgh, Pennsylvania
C. N. Tower Limited
Toronto, Ontario

Architect:
John Andrews, Architect
Webb Zerafa Meknes Housden, Architects
Toronto, Ontario

Curtain Wall:
Robertson Building Systems
Hamilton, Ontario

STAINLESS STEEL
MATERIAL SPECIFICATION:

Type:
304

Thickness:
All Exterior Panels, Flashing, Coping, etc., 0.038 in. (0.96mm)

Finish:
Imperial

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AG = Above Ground
SL = Above Sea Level

Mechanical Level
1) 1191' 2" AG
2) 1427' 1427 SL

FM Transmission Level
1) 1176' 8 AG
2) 1414' 1414' 8 SL

TV Transmission Level
1) 1163' AG
2) 1399' SL

Restaurant Level
1) 1150' AG
2) 1386' SL

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Stainless Steel Painted Red
Plan Section

Louver Caps and Pans are 0.048" (1.22mm)

Perforated Louver Cap
Plan Section

Stainless Steel Self-Tapping Screw

Stainless Steel Pop Rivets

Plan Section

Heating Cables

Cross Section

Plan Section
Dalhousie University
Sports Centre

Halifax, Nova Scotia Air-supported membrane roof

Architect:
Leslie R. Fairn & Associates,
Halifax, Nova Scotia

Designer:
D. A. Sinoski
Toronto, Ontario

Engineering:
Carruthers & Wallace Limited
Rexdale, Ontario

Roof Fabricator:
Blenkhorn & Sawle Ltd.
St. Catherines, Ontario

STAINLESS STEEL
MATERIAL SPECIFICATION
Type:
304
Thickness:
1/16 in. (1.58mm)
Finish:
No. 2B

Ultradome II
(Proposed)
Double membrane air-inflated roof

Designer:
D. A. Sinoski
Toronto, Ontario

Engineering, Fabrication and Erection:
Ultradome Consortium

Members:
Sinoksi Engineering Ltd.
Willowdale, Ontario
Stephen Parazader
Structural Design, Inc.
Dundas, Ontario
Blenkhorn & Sawle Ltd.
St. Catherines, Ontario
Atlas Steels
Welland, Ontario

STAINLESS STEEL
MATERIAL SPECIFICATION
Type:
304
Thickness:
1/16 in. (1.58mm)
Finish:
No. 2B