# Standard for Sheet Steel Cladding for Architectural, Industrial and Commercial Building Applications

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CSSBI
Canadian Sheet Steel Building Institute

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## PREFACE

One of the objectives of the Canadian Sheet Steel Building Institute is the development of product standards to promote safety and sound construction practices. This Standard is intended to assist specifiers, designers, buyers, manufacturers, and erectors of sheet steel cladding by providing information which can be adopted by reference where desired. This Standard replaces the previous edition dated September 2006.

The requirements contained herein are in accordance with sound engineering principles, augmented by experience. They include recommended minimum requirements for such factors as grade of steel, thickness, metallic coating designation, loading and deflections, as well as design, fabrication and erection in general. While the material is believed to be technically correct and in accordance with recognized practice at the time of publication it does not obviate the need to determine its suitability for a given situation. Neither the Canadian Sheet Steel Building Institute nor its members warrant or assume liability for the suitability of the material for any general or particular application.

## REFERENCE PUBLICATIONS

This publication makes reference to the following:

**American Society for Testing and Materials (ASTM)**
A653/A653M Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
A792/A792M Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process

**Canadian Standards Association (CSA)**
CAN/CSA-S136 North American Specification for the Design of Cold-Formed Steel Structural Members

**Canadian Sheet Steel Building Institute (CSSBI)**
10M Standard for Steel Roof Deck
21M Standard for Steel Farm Cladding
S8 Quality and Performance Specification for Prefinished Sheet Steel Used for Building Products

**National Research Council of Canada**
National Building Code of Canada 2005



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# Standard for Sheet Steel Cladding for Architectural, Industrial and Commercial Building Applications

## 1. SCOPE

1.1 This Standard applies to the design, fabrication and erection of sheet steel cladding for architectural, industrial and commercial building applications. The cladding shall be formed from carbon or low-alloy sheet which has been hot-dip coated with zinc or 55% aluminum-zinc alloy and subsequently coil coated (prefinished) with an organic paint system.

1.2 This Standard applies to sheet steel cladding for use on buildings with low internal humidity and includes the necessary closures, gaskets, caulking, flashings and fasteners to effect a weathertight installation in accordance with the job plans and specifications.

## 2. EXCLUSIONS

2.1 This Standard does not apply to "lightweight" steel cladding, intended primarily for agricultural and residential building applications, where the sheet thickness can be less than the minimum specified in Section 5.

2.2 This Standard does not apply to roof deck where roofing materials are to be installed on top of the deck, as covered by CSSBI 10M *Standard for Steel Roof Deck*.

2.3 This Standard does not apply to cladding for use on farm buildings, as covered by CSSBI 21M *Standard for Steel Farm Cladding*.

2.4 This Standard does not cover items which are normally outside the scope of work of the sheet steel cladding manufacturer and erector such as, but not limited to:

a) structural girts, purlins, wall supports, and roof supports;
b) base angles and caulking of same;
c) doors, sash, and louvers, including structural framing or reinforcement for same and other openings;
d) field painting; and
e) cant or parapet flashing, and other flashing associated with other trades.

*NOTE: Prefinished sheet steel material suitable for exposed flashing, fascia, etc. usually can be supplied to other trades by arrangement with the cladding manufacturer. This is recommended where appearance is important.*

## 3. GENERAL

3.1 This Standard is to govern in those cases where the provisions of building codes, architects' and engineers' plans and specifications are not specific. In the event of conflict with a legal building regulation, such regulation shall apply and this Standard shall only amplify, as applicable.

3.2 Unless otherwise stated, where reference is made to another publication, such reference shall refer to the latest edition or revision approved by the organization issuing that publication.

3.3 When the details of the design are not clearly specified in the plans and specifications furnished by the buyer, the manufacturer shall furnish all required materials in accordance with the current specifications and standards of the Canadian Sheet Steel Building Institute (CSSBI).

3.4 Supplementary specifications beyond the scope of this Standard will generally be necessary for:

a) roof cladding for use on low-sloped roofs;
b) standing seam roof cladding;
c) cladding designed for diaphragm action;
d) cladding subjected to loads other than those stipulated in Section 9;
e) cladding subjected to abnormally corrosive conditions; or,
f) any other special circumstances.

## 4. DEFINITIONS

4.1 **Buyer** means the person, firm or company contracting with the manufacturer or erector for the supply and installation of sheet steel cladding.

4.2 **Cladding** means those components (roofing or siding) of a building exposed to the outdoor environment and intended to provide protection against wind, water and vapour.

4.3 **Design Thickness** means the thickness of the base steel that is used in the calculation of section properties on which the load carrying capacity is based. The **Minimum Thickness** shall not be less than 95% of the Design Thickness as permitted by CAN/CSA-S136.

4.4 **Erector** means an erector of sheet steel cladding, who may also be the manufacturer.

4.5 **Manufacturer** means a manufacturer of sheet steel cladding.

4.6 **Prefinished** refers to material in coil form factory-coated with a paint system, or laminate system, prior to delivery to a manufacturer.

4.7 **Roof** means a surface that is inclined less than 70 degrees from the horizontal.

4.8 **Sheet Steel Cladding** means those components of sheet steel that form the exposed exterior surface of a wall or roof of a building.

4.9 **Span** means the lesser of:
- a) the distance between centres of structural supports; or,
- b) the clear distance between structural supports plus the depth of the cladding profile.

4.10 **Wall** means a surface that is vertical or inclined not more than 20 degrees from the vertical.

## 5. SHEET STEEL REQUIREMENTS: CLADDING AND FLASHING

5.1 **Materials**

5.1.1 Zinc coated sheet steel shall conform to ASTM Standard Specification A653/A653M *Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process*, minimum Grade 230, minimum zinc coating designation Z275. The base steel design thickness shall be 0.46 mm or greater.

5.1.2 55% aluminum-zinc alloy coated sheet steel shall conform to ASTM Standard Specification A792/A792M, *Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process*, minimum Grade 230, minimum 55% aluminum-zinc alloy coating designation AZM150. The base steel design thickness shall be 0.46 mm or greater.

5.1.3 Prefinished sheet steel, in addition to meeting the requirements of 5.1.1 or 5.1.2, as applicable, shall be coated in coil form with colours of proven durability for exterior exposure that will meet the performance standards of CSSBI S8 *Quality and Performance Specification for Prefinished Sheet Steel Used for Building Products*.

5.1.4 Fasteners for attaching cladding to structural framing or other structural supports, for attaching flashing to cladding, and for joining cladding components together shall be as recommended by the manufacturer.

*NOTE: The back side of prefinished material is normally coated with a wash coat that may vary in colour. This should be considered in single skin applications with no insulation where the back is visible. If colour matching on the back side is required, a colour controlled coating should be specified.*

5.2 **Minimum Thickness**

5.2.1 The minimum base steel thickness of sheet used for cladding and flashing shall be at least 0.46 mm, but not be less than 95% of the specified design thickness as permitted by CAN/CSA-S136.

*NOTE: In cases where the material specification stipulates a lesser under-tolerance, that more restrictive limit shall apply.*

## 6. FABRICATION

6.1 **General**

6.1.1 Fabrication shall be in accordance with the applicable requirements of CAN/CSA-S136. Care shall be taken to protect exposed surfaces and other features that are important to the appearance.

6.2 **Tolerances**

6.2.1 Upon completion of fabrication, the depth of sheet steel cladding shall not be more than 1 mm under design depth.

6.2.2 Upon completion of fabrication, the actual cover width of sheet steel cladding shall not exceed the specified cover width by more than 10 mm per metre.

## 7. COLLATERAL MATERIAL

7.1 **General**

7.1.1 All collateral materials used in wall or roof systems employing sheet steel cladding shall be of a nature, style and form which will not damage or impair the serviceability of, nor in the case of exposed surfaces the appearance of, sheet steel cladding. Collateral material

may include, but is not limited to, air barrier, convection barrier, vapour retarder, insulation, interior steel liner, sub-girts, purlins, and studs.

7.2 **Field Painting**

7.2.1 Metallic coated sheet steel that is supplied unpainted is usually chemically treated (passivated) at the mill to minimize wet storage stain. Passivated material is generally not suitable for painting without special procedures. Where it is intended to field paint sheet steel cladding, interior liner or other components after erection, check with the cladding supplier.

## 8. SAFETY DURING ERECTION

8.1 Minimum safety requirements pertaining to sheet steel cladding erection are outlined in 8.2 to 8.7 inclusive. In the event of any conflict between these requirements and any legal regulations, the latter shall apply and these requirements shall only amplify as applicable.

8.2 All cladding components being hoisted to the working level shall be adequately banded and carefully slung employing steel wire rope.

8.3 All bundles shall be tag lined during the ascent of the hoisting operation. Precaution shall be taken to avoid damage to cladding components and to prevent marring of exposed surfaces.

8.4 All cladding components, after being positioned, shall be adequately secured in place as quickly as possible and in all cases prior to leaving the jobsite at the end of the working day.

8.5 All loose bundles of cladding components shall be adequately secured at the completion of each working day.

8.6 All scaffolds, platforms, ladders, etc., required by the erector for installation of cladding components shall at all times be properly secured to prevent accidental movement or collapse.

8.7 All cuttings, strapping, packaging materials, and other debris pertaining to cladding components shall be cleaned up each working day and disposed of in a suitable manner.

## 9. GUIDE SPECIFICATION FOR SHEET STEEL CLADDING

9.1 **General**

9.1.1 The General Conditions shall apply.

*NOTE: The specification writer should insert here that the manufacturer shall be a member in good standing of the Canadian Sheet Steel Building Institute.*

9.2 **Work Included**

9.2.1 All labour, materials and equipment necessary to fabricate and erect the sheet steel cladding as shown or called for by the tender documents.

*NOTE: For sheet steel cladding supply-only contracts, edit the Guide Specification accordingly.*

9.2.2 The supply and installation of accessories where shown or called for by the tender documents (eg. cell closures and flashings).

9.2.3 Cutting and flashing of cladding penetrations shown or called for by the tender documents.

9.3 **Related Work**

9.3.1 Structural girts and wall supports.
9.3.2 Structural purlins and roof supports.
9.3.3 Field painting.
9.3.4 Base angles and caulking of same.
9.3.5 Doors, sash, louvers, ventilators.
9.3.6 Structural framing or reinforcement for doors, sash, penetrations or other openings.
9.3.7 Cant or parapet flashings, and flashing associated with other trades.
9.3.8 Steel roof and floor deck.

9.4 **Materials**

9.4.1 Sheet steel cladding and flashing shall be formed of steel conforming to one of the following material specifications, as applicable:

a) ASTM Standard Specification A653/A653M Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process, minimum Grade 230, with a design thickness of ___ mm or greater and a minimum zinc coating designation Z275. Prefinished zinc coated material shall meet the

requirements of (specify coating system). The colour of the finish coat shall be (specify colour).

b) ASTM Standard Specification A792/A792M, Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process, minimum Grade 230, with a design thickness of ___ mm or greater and a minimum 55% aluminum-zinc alloy coating designation AZM150. Prefinished 55% aluminum-zinc alloy coated material shall meet the requirements of (specify coating system). The colour of the finish coat shall be (specify colour).

*NOTE: Standard design thicknesses are 0.46, 0.61, 0.76, 0.91 and 1.22 mm. Metallic coating and paint thicknesses are additional. Prefinish is normally specified by coating system and colour of finish coat. For laminated material , check with supplier. Colours selected should be of proven durability for exterior exposure and meet the performance requirements of CSSBI S8.*

9.5 **Drawings and Specifications**

9.5.1 The buyer shall provide complete architectural and structural plans, specifications and approved structural support drawings with girt and purlin spacings correctly dimensioned.

9.5.2 The erector shall submit ___ copies of erection drawings for approval. The buyer shall return one copy with his approval, or with such corrections as he may deem necessary.

9.5.3 Erection drawings shall show clearly the location of various cladding units, profile designations, finishes, quantities and any other information required for erection purposes.

9.5.4 When changes are made by the buyer, the cost of such changes shall be the basis for re-negotiating the contract.

9.6 **Design**

9.6.1 In the absence of laws, regulations, ordinances and specifications to the contrary, the design of sheet steel cladding shall be in accordance with 9.6.2 to 9.6.8 inclusive.

9.6.2 Structural design shall be in accordance with CAN/CSA-S136.

9.6.3 Wherever structural framing permits, and subject to reasonable limitations for handling, sheet steel cladding shall be designed and fabricated to span continuously over at least four structural supports (three spans).

9.6.4 Loads due to wind, snow or other forces, and related to loading distributions, shall be as prescribed by the structural plans and specifications. Specified loads, principal and companion load factors, building importance category, and load distributions shall be in accordance with the National Building Code of Canada 2005 unless otherwise stated.

9.6.5 Sheet steel cladding components shall be adequately interconnected and adequately fastened to structural supports to sustain the factored loads.

9.6.6 Deflection of sheet steel cladding components due to uniformly distributed specified loads (eg. wind, snow) shall not exceed l/90 of the span for walls, nor l/180 of the span for roofs.

9.6.7 Cladding deflection due to service load, uniformly distributed, shall be calculated as follows:

For a single span:

$$\Delta = \frac{5\, w\, \ell^4}{384EI}$$

For two equal spans:
$\Delta$ = 0.42 times single span value

For three or more equal spans:
$\Delta$ = 0.53 times single span value

Where,
$\Delta$ = calculated live load deflection, mm
w = maximum uniform service load, kPa
$\ell$ = span, mm
E = modulus of elasticity of steel, (203 000 MPa)
I = moment of inertia of the cladding profile, at the specified loading, with the exterior surface at mid-span in compression for positive net wind or snow loads; or with the exterior surface at mid-span in tension for negative net wind loads; $mm^4/m$ of width

9.6.8 Sheet steel cladding shall have a factored moment resistance capable of resisting the effects of the uniformly distributed factored loads determined as follows:

For a single span:

$M_r \geq 0.125(\alpha w)\ell^2$

For two equal spans:

$M_r \geq 0.070(\alpha w)\ell^2$

$M_r' \geq 0.125((\alpha w)\ell^2$, at the interior support

For three or more equal spans:

$M_r \geq 0.080(\alpha w)\ell^2$

$M_r' \geq 0.100(\alpha w)\ell^2$, at the interior supports

Where,

$M_r$ = factored moment resistance at mid-span with the top surface of the cladding in compression, kN•m/m width

$M_r'$ = factored moment resistance at an interior support with the bottom surface of the cladding in compression, kN•m/m width

$\alpha w$ = Effect of load combinations given in NBCC 2005 (See Table below)

D = Dead load: a permanent load, including the weight of steelwork and all materials of construction, partitions, stationary equipment, and the additional weight of concrete and finishes resulting from deflections of supporting members

E = Earthquake load and effects

L = Live load: a variable load due to intended use and occupancy

S = Variable load due to snow, including ice and associated rain or rain alone

W = Wind load: a variable load due to wind.

| | Load Combination | |
|---|---|---|
| Case | Principal Loads | Companion Loads |
| 1 | 1.4D | |
| 2 | (1.25D or 0.9D) + 1.5L | 0.5S or 0.4W |
| 3 | (1.25D or 0.9D) + 1.5S | 0.5L or 0.4W |
| 4 | (1.25D or 0.9D) + 1.4W | 0.5L or 0.5S |
| 5 | 1.0D + 1.0E | 0.5L + 0.25S |

## 9.7 Erection

9.7.1 All erection work shall be carried out by trained erection crews all in accordance with the manufacturer's and these specifications.

9.7.2 Sheet steel cladding shall be adjusted to final position before being permanently fastened to structural supports. If such supports are improperly aligned, levelled or plumbed, the problem shall be reported to the general contractor in order that the necessary corrections be made before proceeding with the work.

9.7.3 Endlaps shall be located over supports. Minimum endlaps shall be:

a) 50 mm for wall cladding;
b) 100 mm for roof cladding used on roofs with a slope of 1 in 4 or more;
c) as per manufacturer's specifications for roofs sloping less than 1 in 4.

9.7.4 Sidelaps shall be connected at intervals not exceeding 600 mm.

9.7.5 Openings, and any necessary flashing, shall be provided as called for by the tender documents.

9.7.6 If additional openings not shown or called for by the tender documents are required, such openings shall be cut and flashed by the erector, but the cost of such extra work shall be charged to the buyer.

9.7.7 When cutting or drilling prefinished material, care shall be exercised to ensure that cuttings do not remain to rust on exposed prefinished surfaces and should re removed as quickly as possible. Where practicable, cutting and drilling shall be conducted so that cuttings do not strike or accumulate on exposed cladding.

## 9.8 Limitations

9.8.1 Any damage or alterations by others to the sheet steel cladding shall not be the responsibility of the erector or manufacturer.

## 9.9 Access

9.9.1 Access for unloading bundles of cladding onto or adjacent to the structure shall be provided by the general contractor.

## 9.10 Storage of Material On Site

9.10.1 Sheet steel cladding shall normally be delivered to the jobsite as required for

erection, but if site storage becomes necessary, suitable storage areas shall be provided by the general contractor as close to the building site as is practicable. Preferably this storage shall be under cover.

9.10.2 When outdoor storage is unavoidable:

a) use good quality covers, other than plastic, loosely shrouded over stacks and firmly anchored to prevent wind blow-off;
b) tilt bundles for drainage;
c) ventilate bundles but do not allow the entry of wind driven precipitation;
d) block bundles off ground for effective ventilation and drainage;
e) block long bundles to prevent sagging;
f) store away from materials that could contaminate the surface (eg. diesel oil, paint, grease) and away from site traffic.

9.10.3 Moisture can cause wet staining of metallic coated and prefinished material and usually occurs as a result of:

(a) condensation from high humidity and/or temperature cycling;
(b) wet shipping conditions; and/or
(c) wind driven rain penetration (outdoor storage).

The usual progression from water staining is unsightly white staining on zinc coated sheet (dark grey on 55% aluminum-zinc alloy coated sheet), to red rust. On material where wet staining has occurred, it should be noted that, except for aesthetic considerations, a nominal amount of staining is not detrimental to the functioning of the product.

9.11 **Clean Up**

9.11.1 Remove all debris resulting from the supply and erection of sheet steel cladding and leave work ready for other trades.

# APPENDIX

## Care and Maintenance of Prefinished Sheet Steel Building Products

### A1. INTRODUCTION

Prefinished sheet steel building products, such as wall and roof cladding, liner sheet, flashing, and associated items, have experienced an enviable growth record during the past fifty years. Coil coated prefinished sheet steel is available in a variety of colours and paint systems has greatly enhanced the appearance of thousands of industrial, commercial, institutional, and recreational buildings, providing an economical, durable and attractive alternative to traditional materials. As with all materials, a little care and maintenance pays off handsomely in terms of longevity and repair costs. The recommendations which follow have been learned at first hand and represent the collective industry experience with thin-film paint systems applied to metallic coated sheet steel by the coil coating process. In this publication the term "thin-film paint system" refers to a coil coated paint system having a paint thickness about 25 µm.

When the guidelines listed below have been followed, thin-film paint systems have been used successfully for all types of environments other than severe industrial atmospheres which require special consideration. The guidelines are not intended for barrier coatings, laminates, and new formulations which have different characteristics than the thin-film paint systems on which these guidelines are predicated.

### A2. DESIGN, DETAIL AND COLOUR CONSIDERATIONS

- Architectural details should permit natural rainflow cleaning of the cladding.
- On roofs or other horizontal surfaces, standing water can contribute to the premature failure of the paint system and substrate. Detailing should avoid damming or ponding of rain-flow at stacks, ventilators, air control equipment and other roof penetrations.
- Due to colour tolerances, there may be differences in colour shade between product from different production runs. Where possible, ensure that each building elevation

is clad with material from the same production lot. If different production lots must be used on one elevation, as may occur when making an addition to an existing building, try to begin the cladding on an elevation change or break in the building to minimize the effect of possible colour variations.

- A sufficient roof slope to permit drainage is recommended (eg. 1/4 in 12 or greater where rainfall is heavy, drainage restricted, etc.)
- Roof surfaces, defined as those up to 70 degrees from the horizontal, are subject to more severe exposure conditions than vertical surfaces. Colour changes due to extended exposure to ultraviolet light can be minimized by using a light colour for the roof. Acid rain precipitation and drip edge ponding are other conditions that could affect the appearance and durability of the paint finish. Drip edge ponding may be minimized with a steeper roof slope or by modifying the edge details. If severe acid rain precipitation is experienced, a more resistant paint system may be required.
- The building design should seek to minimize the installation of mechanical equipment on a prefinished roof. Walkways should be provided where regular traffic is necessary for maintenance.
- In wall applications, horizontal portions of the cladding and base flashing should be sloped to prevent moisture from ponding.
- Walls shadowed by overhangs and all soffit areas have an increased time of wetness relative to other wall areas. The increased time of wetness creates a more aggressive environment for the cladding so affected; therefore, architectural details should try to minimize these areas.
- To decrease the visibility of "oil canning", select an adequate material thickness, a narrower flute and a lighter colour.
- To prevent galvanic corrosion, the architectural details should avoid contact of dissimilar metals or should provide an adequate means of separation. The path of rainfall runoff should also be directed to prevent water runoff across one type of material to another which can also cause accelerated corrosion.

## A3. FABRICATION

- Tooling, whether for roll forming or brake forming should be burr free and cleaned periodically during runs.
- For moderate forming, inside bend radii should be at least twice the base steel thickness (2T). For 180 degree bends, or other severe forming, inside bend radii should be at least three times the base steel thickness (3T).
- Brake forming is usually more severe than roll forming, consequently, a 50 percent larger bend radius than for roll forming is recommended.
- It is preferable that prefinished sheets be formed at room temperature, 20°C (68°F) minimum.

## A4. TRANSPORTATION

- The recommended loading/unloading method is fork-lift truck with widely spaced forks lifting under timber or similar crating. When loading/unloading with a crane, it is necessary for use suitable slings and a spreader bar. Slings should be choked and bundles tag lined.
- For protection against salt, rain, dirt, etc., during transport, cladding panels should be properly covered but also well ventilated.
- If chains are used to secure cladding panels or as slings, it is necessary to protect the bundle corners under cinch points.

## A5. INSTALLATION

### General

- When handling tools, care should be taken to protect the paint finish. Rubber soled shoes should be worn if it is necessary to walk on prefinished material.
- Since scratches or scuff marks will contribute to paint failure, these areas should be touched up carefully with a matching compatible paint.

### Cutting and Drilling

- It is recommended that only reciprocating saws, nibblers or shears be used. Any cutting method that generates excessive heat is unsuitable since the heat will damage the painted surface. Flame cutting will cause extensive damage to the surrounding paint surface.
- Prepainted sheets should be turned paint side down during cutting and drilling to

avoid damage to the paint coating from the hot filings.

- If a high speed disc cutter must be used on material that will be exposed, use the proper metal cutting disc, cut only one sheet at a time, and do not force the cutting disc. Any burrs should be removed with a file or shears and touched up with paint.
- Gang drilling is discouraged because drill burrs can cause drag scratching and the holes are frequently misaligned.
- Filings from cutting or drilling can damage the paint finish and contribute to surface abrasion. These filings should be removed as quickly as possible by one of several methods: dry mops, soft bristle brush brooms, soft cloths, magnetic bar collectors, or power water wash. Steel particles should be removed daily since overnight dew is sufficient to cause these particles to rust. This rusting of filings gives the impression that the coating has deteriorated with apparent failure of the sheet. The rust produces unsightly surface stains that are difficult to remove.

## A6. FIELD PAINTING AND TOUCH-UP

- Painting over a new installation is not recommended. All coil coated paint films have internal additives that do not allow good adhesion between field-applied paint and the coil coated paint layer. Also, because touch-up paint will not last as long as the original, keep the touch-up to a minimum. A small artist's brush or a small air brush should be used.
- Replace a panel rather than attempt to touch-up large areas; a spot 20 mm (3/4") in diameter will become more prominent in time.
- For additional information on repainting, consult a manufacturer member of the Institute.

## A7. MAINTENANCE

- An occasional thorough cleaning of prefinished material can extend the service life and help to maintain the appearance of the finish. Simply washing with plain water using hoses or pressure sprays is often sufficient.
- In areas where heavy dirt deposits dull the surface, a solution of water and detergent may be used: 100 ml of a typical laundry powder detergent containing less than 0.5% phosphate) per 4.5 litres of water. A soft bristle brush should be used for scrubbing followed by a clear water rinse.
- Mildew may occur in areas subject to high humidity. To remove mildew along with the dirt, the following is suggested:
  - 100 ml laundry detergent
  - 200 ml trisodium phosphate (TSP)
  - 1 litre 5% sodium hypochlorite solution (laundry bleach)
  - 3 litres water
  - Use in a well ventilated area
  - A clean water rinse should follow
- Solvent and abrasive cleaners should be avoided. Caulking compounds, oils, grease, tars, wax and similar substances can be removed with mineral spirits applied only to the areas that are affected. Detergent cleaning and thorough rinsing should follow the use of solvent.