SECTION 10 26 23 – impact resistant wall protection

1. General
   1. Summary

SPEC NOTE: Please note that this Section has been modified to reflect impact resistant wall coverings, but note that there are other impact resistant materials such as handrails, bumper rails, and crash rails for example. If you require one of these other materials that are not currently listed in this Section, please consult your Spec Leader for assistance.

SPEC NOTE: Please edit the following paragraphs to reflect the project requirements.

* + 1. This Section includes requirements for supply and installation of the following:
       1. Corner guards.
       2. Impact resistant wall coverings.
  1. Reference standards
     1. American Society for Testing and Materials (ASTM):
        1. ASTM A240/A240M‑08, Standard Specification for Chromium and Chromium‑Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
        2. ASTM B221/B221M‑08, Standard Specification for Aluminum and Aluminum‑Alloy Bar, Rod, and Wire.
        3. ASTM D256‑05a, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
        4. ASTM D543‑95(2001), Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents.
        5. ASTM D635‑07, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
        6. ASTM D1784‑07, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
     2. Underwriters Laboratories of Canada (ULC):
        1. ULC S102‑18, Surface Burning Characteristics of Building Materials and Assemblies.
  2. Submittals
     1. Provide required submittals in accordance with Section 01 33 00 – Submittal Procedures.
     2. Action Submittals: Provide the following submittals before starting work of this section:
        1. Submit product data including construction details, material descriptions, impact strength, fire test response characteristics, dimensions of individual components and profiles, and finishes for each impact resistant wall protection unit.
        2. Submit shop drawings for each impact resistant wall protection unit showing locations and extent including sections, details, and attachments to other work.
     3. Information submittals: Provide the following submittals when requested by the Consultant:
        1. Submit samples for initial selection for each type of impact resistant wall protection unit indicated; include similar samples of accent strips and accessories involving colour selection.
        2. Submit samples for verification for each type of exposed finish required, prepared on samples of size indicated below, include accent strips to verify colour selected where required:
           1. Impact Resistant Wall Covering: 305mm x 305mm square.
           2. Corner Guards: 305 mm long with examples of joinery, corners, end caps, top caps, and field splices.
        3. Submit material test reports for each impact resistant plastic material, signed by manufacturer.
  3. Project Closeout Submissions
     1. Provide operations and maintenance information in accordance with Section 01 33 00 – Submittal Procedures.
        1. Submit maintenance data for each impact resistant wall protection unit to include in maintenance manuals in accordance with Section 01 33 00 – Submittal Procedures, and as follows:
           1. Include recommended methods and frequency of maintenance for maintaining optimum condition of plastic covers under anticipated traffic and use conditions.
           2. Include precautions against using cleaning materials and methods that may be detrimental to plastic finishes and performance.
  4. Quality Assurance
     1. Installer Qualifications: Only installers who have completed the manufacturer's authorized training program, and who are approved for both installation and maintenance of specified impact resistant wall protection units will be acceptable for this Project.
     2. Source Limitations: Obtain impact resistant wall protection units through one source from a single manufacturer.
     3. Fire Test Response Characteristics: Provide impact resistant, plastic wall protection units with surface burning characteristics having a flame spread rating of 25 or less when tested in accordance CAN/ULC S102.
  5. Delivery, Storage, and Handling
     1. Store impact resistant wall protection units in original undamaged packages and containers inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity:
        1. Maintain room temperature within storage area at not less than 21 deg C during the period plastic materials are stored.
        2. Keep plastic sheet material out of direct sunlight.
        3. Store plastic wall protection components for a minimum of seventy-two (72) hours, or until plastic material attains a minimum room temperature of 21 deg C.
           1. Store corner guard covers in a vertical position.
           2. Store sheet products in horizontal position.
  6. Project Conditions
     1. Deliver and install impact resistant wall protection units after building is enclosed and weatherproof, when wet work is complete and dry, and HVAC system is operating and maintaining temperature at 21 deg C for not less than seventy-two (72) hours before beginning installation and for the remainder of the construction period.
     2. Verify actual locations of walls, columns, and other construction contiguous with impact resistant wall protection units by field measurements before fabrication and indicate measurements on shop drawings.
  7. WARRANTY
     1. Submit manufacturer's standard warranty agreeing to repair or replace components of impact resistant wall protection units that fail in materials or workmanship within five (5) years from date of Substantial Performance for the Project; Consultant will identify failures as the following:
        1. Structural failures.
        2. Deterioration of plastic and other materials beyond normal use.
  8. Extra Materials
     1. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
        1. Full size panels of impact resistant wall covering equal to 2% of each type, colour, and texture of units installed, but no fewer than two (2) panels.
        2. Corner Guard Covers: Full size plastic covers of maximum length equal to 2% of each type, colour, and texture of units installed, but no fewer than two (2) 1220 mm long units.
     2. Include mounting and accessory components. Replacement materials shall be from same production run as installed units.

1. Products
   1. MANUFACTURERS
      1. Basis‑of‑Design products are named in this Section; additional manufacturers offering similar setting systems may be incorporated into the work provided they meet the performance requirements established by the named products.
      2. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
         1. Construction Specialties, Inc.
         2. IPC Door and Wall Protection Systems
         3. Korogard Wall Protection Systems
         4. Pawling Corporation
   2. Materials
      1. Plastic Sheet Wall Covering Material: ASTM D1784, Class 1, textured, chemical and stain resistant, semi‑rigid, high impact resistant PVC or acrylic modified vinyl plastic sheet with integral colour throughout; and as follows:
         1. Impact Resistance: Minimum 1.36 kN of notch in accordance with ASTM D256, Test Method A.
         2. Chemical and Stain Resistance: In accordance with ASTM D543.
         3. Self extinguishing in accordance with ASTM D635.
         4. Flame Spread Index: 25 or less.
         5. Smoke Developed Index: 450 or less.
      2. Aluminum Extrusions: Alloy and temper recommended by manufacturer for type of use and finish indicated but with not less than strength and durability properties specified in ASTM B221 for Alloy 6063 T5.
      3. Stainless Steel Sheet: ASTM A240.
      4. Fasteners: Aluminum, or other non‑corrosive metal screws, bolts, and other fasteners compatible with items being fastened. Use security type fasteners where exposed to view.
      5. Adhesive: Type recommended by manufacturer for use with material being adhered to substrate indicated.
   3. Corner Guards
      1. Surface Mounted, Resilient, Plastic Corner Guards (CG-100): Assembly consisting of snap on plastic cover, installed over continuous retainer; including mounting hardware; fabricated with bend angle turn to match wall condition, and as follows:
         1. Cover: Extruded rigid plastic, minimum 2 mm wall thickness, as follows:
            1. Profile: Nominal 38 mm long leg and 6 mm corner radius.
            2. Height: Full height, floor to ceiling.
            3. Colour, Texture, Model, and manufacturer: As indicated in   
               Section 09 06 05 – Product and Finish Schedule.
         2. Retainer: Minimum 1.5 mm thick, single piece extruded aluminum.
         3. Top and Bottom Caps: Prefabricated, injection moulded plastic; colour matching cover; field adjustable for close alignment with snap on cover.
      2. Surface Mounted, Metal Corner Guards (CG-101B): Fabricated from single piece, formed metal with eased edges; bend angle turns to match wall condition, and as follows:
         1. Material: Stainless steel, Type 304
         2. Finish, Model, and manufacturer: As indicated in Section 09 06 05 – Product and Finish Schedule.
         3. Wing Size: Nominal 38 mm x 38 mm.
         4. Corner Radius: 3 mm.
         5. Height: Full height, floor to ceiling.
         6. Mounting: Double faced, adhesive foam tape or adhesive, as recommended by the manufacturer.
   4. Impact Resistant Wall Coverings
      1. Semi‑rigid, Impact Resistant Sheet Wall Covering: Fabricated from plastic sheet wall covering material, and as follows:

SPEC NOTE: Modify the following paragraphs and edit to reflect the materials indicated in Section 09 06 05 – Product and Finish Schedule.

* + - 1. Size: [1220 mm x 2440 mm] [1220 mm x 3050 mm].
      2. Sheet Thickness: [1.0mm (0.04”)] [1.5mm (0.06”)] [2.0mm (0.075”)].
      3. Height: [Full wall] [half height] [As indicated].

SPEC NOTE: Trim and mouldings are typically only available for 1.5 mm and thicker materials.

* + - 1. Trim and Joint Mouldings: Extruded rigid plastic that matches sheet wall covering colour.
      2. Mounting: Adhesive.
      3. Colour, Texture, Model and Manufacturer: As indicated in Section 09 06 05 – Product and Finish Schedule.
  1. Fabrication
     1. Fabricate impact resistant wall protection units to comply with requirements indicated for design, dimensions, and member sizes, including thicknesses of components.
     2. Assemble components in factory to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.
     3. Fabricate components with tight seams and joints with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.

1. Execution
   1. Examination
      1. Examine substrates and wall areas for compliance with manufacturer’s requirements for installation tolerances and other conditions affecting performance of work.
      2. Examine walls that will receive impact resistant wall protection and verify that blocking, grounds, and other solid backing that have been installed in the locations required for secure attachment of support fasteners.
      3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers for impact resistant wall protection units attached with adhesive.
      4. Proceed with installation only after unsatisfactory conditions have been corrected.
   2. Preparation
      1. Complete finishing operations, including painting, before installing impact resistant wall protection system components.
      2. Clean substrate to remove dust, debris, and loose particles before installation.
   3. Installation
      1. Install impact resistant wall protection units’ level, plumb, and true to line without distortions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.
      2. Install impact resistant wall protection units in locations and at mounting heights indicated on Drawings.
      3. Provide splices, mounting hardware, anchors, and other accessories required for a complete installation, and as follows:
         1. Provide anchoring devices to withstand imposed loads.
         2. Splice aluminum retainers and plastic covers at different locations along the run where splices occur in horizontal runs of more than 6100 mm; no closer than 305mm apart.
         3. Adjust end and top caps as required to form tight seams.
      4. Provide top and edge mouldings, corners, and divider bars as required for a complete installation of impact resistant wall coverings.
   4. Cleaning
      1. Clean plastic covers and accessories using a standard, ammonia based, household cleaning agent immediately after completion of installation.
      2. Remove excess adhesive using methods and materials recommended in writing by manufacturer.

END OF SECTION