

DESIGN AND CONSTRUCTION GUIDELINES AND STANDARDS

DIVISION 6 • WOODS & PLASTICS

06 50 00 • STRUCTURAL PLASTICS & COMPOSITES

SECTION INCLUDES

Plastic & Composite Railings
Plastic & Composite Decking

RELATED SECTIONS

06 10 00 Rough Carpentry
06 20 00 Finish Carpentry
06 65 00 Plastic and Composite Trim
08 10 00 Doors & Frames
09 90 00 Painting

Technical Standards

ASTM D 570 Water Absorption in Plastics
ASTM D 638 Tensile Properties in Plastics
ASTM D 198 Compressive Strength
ASTM D696 Coefficient of Thermal Expansion
ASTM D 1037 Water Absorption by Weight
ASTM D 2394 Wet Static Coefficient of Friction
ASTM D 1761 Screw Withdrawal
ASTM E 84 Flame Spread Index

General Material Considerations

The manufacturing process of Structural Plastics is similar to that of non-structural plastics. The difference in materials is the introduction of fiberglass strands, selected additives and rebar rods for added structural strength. The material is resistant to insect infestation, moisture absorption and corrosive substances. The material will not rot, splinter or crack.

PLASTIC & WOOD-PLASTIC COMPOSITE RAILINGS DESIGN

Carefully evaluate costs for structural plastic and composite railings. Avoid specifying proprietary products or products without 5-year minimum field tested installation track record.

Specify a 25 year warranty.

Avoid railing "systems" which rely on excessive, labor-intensive disassembly or large-scale replacement of parts to accomplish minor repairs.

Do not specify painted systems whose long-term warranty is contingent upon a painted finish to protect the trim.



Avoid specifying products which possess inherent obstacles to future, cost-effective recycling. (proprietary mixes of organic and inorganic compounds which are difficult to separate or binders with known toxicity).

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WOOD-PLASTIC COMPOSITE DECKING

DESIGN

Material choices should be based on durability, cost and availability.

Specify decking materials with a static coefficient of friction greater than 0.60. Some products are coated in a mildew resistant coating which is extremely slippery when wet. These products should be avoided at this time.

Design framing to maximize the spanning capabilities of the decking.

Specify light, high reflectance colors to mitigate heat build-up and thermal movement and fading from ultraviolet light.

Do not specify products containing a high-percentage of recycled wood (greater than 50%). These products are inherently prone to water and UV damage because the wood fillers do not bind completely to the plastics and require painting and ongoing maintenance for protection.

MATERIALS



Avoid specifying products which possess inherent obstacles to future, cost-effective recycling. (proprietary mixes of organic and inorganic compounds which are difficult to separate or binders with known toxicity).

Do not specify decking whose long-term warranty is contingent upon a painted finish.

Consider using high-density, polyethylene products where wood will be in direct contact with the ground.

Acceptable manufactures include: Trex,(Trex); Timbertech (Crane Plastic); Fiberon (Fiber Composites); Carefree Composite, (USPL); Fibrex, Anderson; Boardwalk (Certainteed).

INSTALLATION

Allow for water drainage. Rain water should runoff naturally without standing water.

Application of decking using a blind nailing system is preferred.