

Special Specification 4060

Wing Wall Repair



1. DESCRIPTION

This specification covers repair of damaged Wing Walls. This includes repair of damage to or replacement of the composite plastic timbers and repair or replacement of Polyethylene rubber facings.

2. MATERIALS

Furnish new materials. Ensure all materials and construction methods conform to the details shown on the plans and the requirements of this item.

2.1. Reinforced Composite Plastic Timbers. Reinforced Composite plastic timbers to be replaced in accordance with the summary sheet must be manufactured:

- From recycled plastic,
- Be abrasion resistant,
- Be of low friction material, with anti-oxidants and ultraviolet inhibitors,
- Be reinforced with fiberglass rebar,
- Have structural properties sufficient to distribute the load from contact by the ferry,
- Be of ultra-high molecular weight (UHMW) polyethylene resistant to abrasion, oil, seawater, and weather,
- Be of sufficient material to evenly distribute the reaction load over the pile, and
- Fasteners must be stainless steel conforming to ASTM F593, alloy type 316L.

2.2. **Polyethylene Facing.** Polyethylene facing to be replaced in accordance with the summary sheet must:

- Be ultra-high molecular weight (UHMW),
- Be 100 percent cross-linked for abrasion resistance,
- Be ultraviolet (UV) stabilized with 0.6 percent to 2.5 percent carbon black,
- Be of 100 percent virgin UHMW polyethylene material,
- Fasteners must be stainless steel conforming to ASTM F593, alloy type 316L.

2.2.1. Butt-welded UHMW polyethylene will be accepted provided the following requirements are met.

- The manufacturer has at least 5 years of experience in welding UHMW polyethylene in thickness greater than 1 in.;
- The manufacturer has produced butt-welded material for critical technical applications;
- Is able to produce documentation to substantiate butt-welded applications;
- The welded joint must have at least 90 percent of the tensile strength of the base material; and
- Welded seams must be flush with smooth contour.

3. EQUIPMENT

Provide equipment and tools needed to perform the work. Keep and maintain all equipment in good operating condition.

4. WORK METHODS

Installation will be in accordance with the plans.

5. MEASUREMENT

This Item will be measured by the each plastic composite timber or polyethylene facing replaced on a wing wall as shown in the plans.

6. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Replacement of Wing Wall Composite Plastic Timber" or "Replacement of Polyethylene Facing." This price is full compensation for furnishing, installing, labor, equipment, tools and incidentals.