

**Technical Note 45**

# **Surface Finish of Prestressed Concrete Octagonal Piles**

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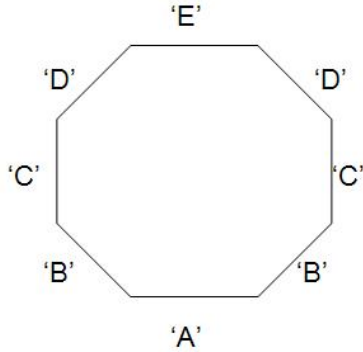
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## 1 Surface Finishes

It is often difficult to manufacture prestressed piles to MRTS73 with a uniform finish on all eight faces of the pile. This is due to the type of formwork used. The following guidelines should be noted in addition to Clause 11.6 of MRTS73 (09/14).



### 1.1 General

The Specification has specific requirements regarding surface condition: "concrete shall be ... free from chipped edges, fins, protrusions and surface roughness, including air holes." Air holes larger than 12 mm in lateral dimension or 3 mm in depth require repair. Air bubbles greater than 10 mm in depth may lead to rejection.

In particular the area near the pile tip should be thoroughly checked and repaired if necessary.

### 1.2 Lower faces

Faces 'A' 'B' and 'C' shall have a Class 2 finish to AS 3610. This should be readily achievable with clean rigid metal forms and adequate vibration of workable concrete. The slope of Face 'C' may vary up to 5 mm from the vertical to enable the pile to be easily removed from the form.

**Figure 1: Acceptable Surface Finish following repair (Face C)**



### 1.3 *Inclined faces*

Precast manufacturers should also aim for a Class 2 finish on faces 'D', but because of the air bubbles trapped against these faces produced by vibration an alternative below may be accepted.

A finish with slightly more air bubbles in a given area than that required for a Class 2 finish may be acceptable. The manufacturer should submit a sample for approval. If agreed to by the Contract Administrator this sample should be kept on site and used as a guide to the minimum standard of finish that may be accepted.

Where this concession is allowed, these surfaces should be bagged between ground level and bottom of headstock level (This may not be enforced in remote areas - where appearance is deemed not important - at the discretion of the Contract Administrator).

**Figure 2: Unacceptable surface finish (Face D)**



### 1.4 *Upper face*

Face 'E' (the top face) must be smooth finished with a steel trowel and then marked for length (Clause 15.1 of MRTS73 (09/14)).

### 1.5 *Lifting points*

Lifting loops should be cut back to level and the surface painted with surface tolerant epoxy.

If Swift Lift Anchors are used the anchor should not be removed but the recess around the anchor should be water blasted and filled with a registered cementitious repair mortar, to produce a smooth finish to the pile at this point. At the discretion of the Administrator, the recess around the anchor can be left open to facilitate lifting and transport and the recess filled on site.

