910 CONCRETE BARRIERS

Three methods of constructing barriers are allowed under the specifications:

1. Cast-in-place by slip form or extrusion.

2. Cast-in-place by fixed form.

3. Precast.

The most common method where large quantities are involved is the slip form system. Shorter runs of barrier are commonly cast in fixed forms or are precast sections.

Whichever method is used, the final appearance will be influenced by the foundation. The Inspector will need to exert the greatest part of his/her effort towards getting the Contractor to prepare the foundation for the barrier or the grade the slip-form will ride on so that smooth horizontal and vertical lines will result.

The placing of concrete barriers on new bridges may not precede the release of falsework. Concrete barriers and barrier transitions to be constructed on bridges can only be constructed by fixed form, cast-in-place methods.

If at all possible, the engineer should inspect work that has been done by the equipment to be used. By inspecting previous work any shortcomings can be discussed with the Contractor and corrective measure agreed on. There have been problems in the past with vertical cracking of slip-formed barrier. In some cases the problem was never completely eliminated but the condition has been eased by attention to the rate of travel, maintenance of the proper concrete level when feeding the machine, properly operating vibrators, proper cure, and fine tuning the concrete mix.

The alignment of the barrier is very important and project personnel should be familiar with the tolerance requirements of the specifications. If difficulties are experienced by the Contractor in providing an acceptable product, then the engineer should take steps to correct the problem or stop work until the Contractor can provide a product within the allowable tolerances. Barrier that has an unsatisfactory alignment which cannot be corrected to the satisfaction of the engineer should be removed.

Cast-in-place forms are usually made of metal and need to be inspected for dents, bends, or any other defects that would be detrimental to the appearance of the finished barrier. Precast barrier sections will probably be inspected at the supplier's plant. As with any precast item, it is good practice for the engineer to inspect finished work at the plant early in the production run. If the jobsite inspection shows cause for rejection, this can be resolved with the least disruption and expense to all parties if done before installation. The fact that precast barriers were inspected and accepted at the plant does not mean they must be accepted on the job if they are defective.

Joint sealant is used in all three types of barrier but the time of application and sealing procedure varies so it is important that the Inspector is aware of the provisions for the particular type of barrier and the particular project.