

TECHNICAL  
BRIEF

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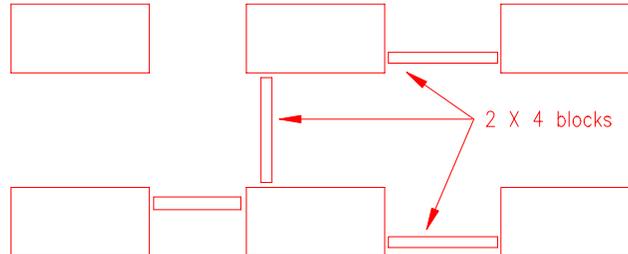
**To be used on permanent systems, by request only. Not to be used on lease systems**

**CONCRETE REPAIR - BARRIER**

The following is the procedure to repair damaged barrier. It is most important that the repair steps be followed exactly. Safety glasses and gloves must be worn at all times when doing the following repair.

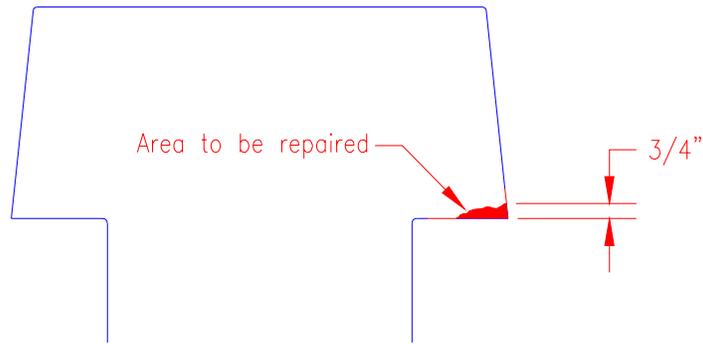
**BARRIER PLACEMENT**

If the barriers with bottom corners to be repaired are placed as shown below securing the forms will be easy. If they are random placed each barrier form will have to be clamped. This will take extra time and a considerable amount of clamps. Short sections of 2 X 4,s can be used to secure the forms. Small wooden wedges can be used on the ends of the 2 X 4,s to make final adjustments.



**SURFACE PREPARATION**

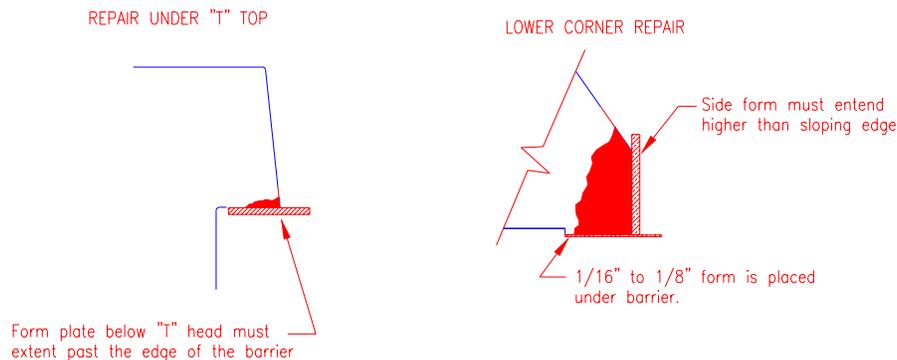
The surface to be repaired must be free of all oil and dirt. If necessary use a hammer and cold chisel to remove additional concrete to obtain a clean and rough surface. The perimeter (outside) edge of the repair must have a depth of at least 1/4". When repairing the area under the T head, the outside of the repair should have a distance of at least 3/4". To obtain this distance it is often necessary to chip away some additional material. This will allow room to force the material into the area for repair. See sketch below.



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**FORM PLACEMENT**

Steel forms must be clamped in place as shown below. Before the forms are clamped in place the concrete in the area must be sprayed with water. The concrete should be completely saturated without any standing water. The forms must be sprayed with a form release agent prior to being clamped in place.



**MIXING PATCH MATERIAL**

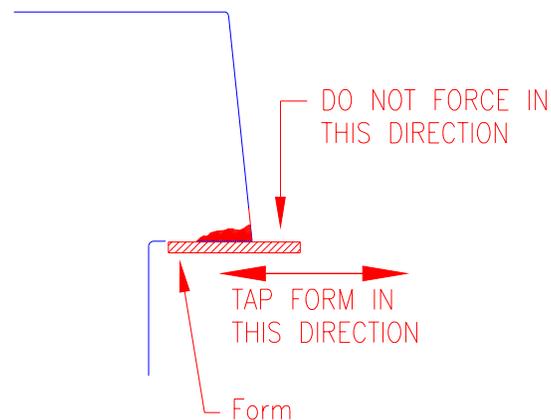
Mix Five Star Structural Concrete V/O with water for approximately three to five minutes to a uniform consistency. The consistency should be that of soft putty. Do not exceed maximum recommended amount of mixing water stated on the package. Do not mix more material than can be placed in 15 minutes.

**APPLYING PATCH MATERIAL**

The patching material must be added in small portions. Each time new material is added to a repair area it must be forced against the broken concrete and the form. A small putty knife or similar tool can be used to work the material to the rear area of the patch. The material should be tamped into place ensuring that there are no voids in the repair. The total area to be patched should be filled using this procedure. Some excess material should be added. This will ensure that the patched area is complete. The excess will be trimmed off later. The area should be kept wet with water for approximately 30 minutes after final shaping is complete.

### REMOVING THE FORMS

The time between applying the patch and removing the forms will depend on the temperature. The time will be around one hour. A trowel can be used to test the patch. You should be able to easily cut the surface and remove some material without any movement. At this time remove the clamps from the forms. If they do not fall away use a small hammer and tap the forms in a sideways motion. Do not attempt force on the form directly away from the repair. This will cause unnecessary force on the uncured repair. See sketch below.



### FINAL FINISHING

Immediately after removing the forms the repaired surface must be finished. A putty knife or trowel can be used to shape the surface. The excess material can be cut away to match the original surface. **It is important that this be completed before the patch completely cures.**

If there are any voids under the area of the forms a small amount of patch material can be added at this time. Small voids are sometimes common on the inner side of an under T head repair.

### MOVING REPAIRED BARRIERS

The barriers should not be moved for at least 24 hours. When they are moved be careful not to apply force to the repaired area. If a lower corner has been repaired set the barrier down on the opposite end first to minimize force on the repaired area.