

Section 1076

1 1074-12 METAL STAY-IN-PLACE FORMS

2 Provide metal stay-in-place forms for concrete floor slabs of zinc-coated (galvanized) steel
3 sheet conforming to ASTM A653, Structural Steel (SS) Grades 33 through 80 and Coating
4 Class G165 meeting all requirements relevant to steel stay-in-place forms as noted on the
5 contract plans. Do not use material thinner than 20 gauge.

6 1074-13 STEEL GRID FLOORING

7 Steel grid flooring shall conform to the requirements of AASHTO LRFD Bridge Construction
8 Specifications, Section 12 and these Specifications.

9 SECTION 1076 **10 GALVANIZING**

11 1076-1 GALVANIZING

12 Wherever galvanizing is required, perform the galvanizing in accordance with this section
13 except where other requirements for galvanizing are included in other sections of the
14 *Standard Specifications*.

15 Allow the Engineer to obtain samples of molten zinc directly from the galvanizing vat upon
16 request.

17 1076-2 INSPECTION NOTIFICATION

18 Coordinate galvanizing inspection with the Materials and Tests Unit in accordance with
19 Subarticle 1072-7(A). Before inspection, the galvanizer/supplier shall provide the
20 Department's inspector with NCDOT approved drawing/purchase order, stating contract
21 number, location of project, quantity/type of material being galvanized and mill test report(s)
22 for respective material.

23 1076-3 FABRICATED PRODUCTS

24 Galvanize products fabricated from rolled, pressed and forged steel shapes, plates, bars and
25 strips 1/8 inch thick and heavier in accordance with AASHTO M 111. Fabricate products into
26 the largest unit that is practicable to galvanize before the galvanizing is done. Fabrication
27 includes all operations necessary to complete the unit such as shearing, cutting, punching,
28 forming, drilling, milling, bending, welding and riveting. Galvanize components of bolted or
29 riveted assemblies separately before assembly. When it is necessary to straighten any
30 sections after galvanizing, perform such work without damage to the zinc coating.

31 Completely seal all edges of tightly contacting surfaces by welding and commercial blast
32 clean to SSPC-SP 6 before galvanizing.

33 Commercial blast clean components with partial surface finishes in accordance with
34 Subarticle 442-7(A) before pickling.

35 1076-4 HARDWARE

36 Galvanize iron and steel hardware in accordance with AASHTO M 232.

37 1076-5 ASSEMBLED PRODUCTS

38 Completely seal all edges of tightly contacting surfaces by welding before galvanizing.
39 Galvanize assembled steel products in accordance with AASHTO M 111.

40 1076-6 SHEETS

41 Galvanize iron or steel sheets in accordance with ASTM A653.

42 1076-7 REPAIR OF GALVANIZING

43 Repair galvanized surfaces that are abraded or damaged at any time after the application of
44 zinc coating. Surfaces to be repaired shall be clean, dry and free of oil, grease, pre-existing

1 paint, corrosion and rust. Surface to be repaired shall be blast-cleaned to SSPC-SP 10 (near
2 white).

3 Where circumstances do not allow blast or power tool cleaning to be used, then hand tools
4 may be used. Cleaning shall meet SSPC-SP 2, the removal of loose rust, mil scale or paint to
5 the degree specified, by hand chipping, scrapping, sanding and wire-brushing. Surface
6 preparation shall extend into the undamaged galvanized coating. Spray using a non-aerosol
7 spray, or brush-apply the paint to the cleaned areas with 2 coats of organic zinc repair paint
8 meeting Article 1080-9. Ensure that the total thickness of the 2 coats is not less than 3 dry
9 mils. Allow adequate curing time before subjecting repaired items to service conditions in
10 accordance with the manufacturer's printed instructions.

11 Application conditions shall be 40°F Air/Steel temperature and rising, steel temperature shall
12 be 5°F above the dew point and relative humidity shall be 85% or less. Follow paint
13 manufacturers recommendation if more restrictive than above requirements.

14 Follow paint manufacturers written instructions on storage temperatures, mixing application,
15 continuous agitation and pot life. No thinners are to be used when applying organic zinc
16 repair paint by brush or roller.

17 Instead of repairing by painting with organic zinc repair paint, other methods of repairing
18 galvanized surfaces that are abraded or damaged are allowed provided the proposed method is
19 acceptable to the Engineer.

20 Excessive damage to galvanized surfaces as determined by the Engineer is cause for rejection.
21 Replace or re-galvanize rejected galvanized material.

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SECTION 1077

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PRECAST CONCRETE UNITS

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1077-1 GENERAL

25 Use precast concrete units from sources participating in the Department's Precast Concrete
26 QC/QA Program. A list of participating sources is available from the Materials and Tests
27 Unit. The Department will remove a manufacturer of precast concrete units from this program
28 if the monitoring efforts indicated that non-specification material is being provided or test
29 procedures are not being followed.

30 This section covers the materials for and the production of precast reinforced concrete units
31 produced in accordance with the contract. Where precast reinforced concrete circular manhole
32 sections are used, they shall meet AASHTO M 199.

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1077-2 PLAN REQUIREMENTS

34 The plans for precast units will be furnished by the Department in the *Roadway Standard*
35 *Drawings* or details shown in the project plans.

36 When the Department does not make precast plans available and the Contractor chooses to
37 precast, submit drawings to the Engineer for the items proposed to precast. Submit one
38 complete set of drawings for review, at least 40 calendar days before beginning production.
39 After acceptance, submit seven complete sets of drawings. Acceptance by the Engineer of
40 contractor drawings will not be considered as relieving the Contractor of any responsibility
41 for precast units. When precast units are load bearing and require structure design, have the
42 plans prepared and certified by an engineer licensed by the State of North Carolina.
43 Contractor furnished drawings shall show complete design, installation and construction
44 information in such detail as to enable the Engineer to determine the adequacy of the
45 proposed units for the intended use. Contractor drawings shall include details of steel
46 reinforcement size and placement and a schedule that lists the size and type of precast units at
47 each location where the precast units are to be used. Produce precast units in accordance with
48 the approved drawings.