

## Section 715. CLEANING AND COATING EXISTING STRUCTURAL STEEL

**715.01 Description.** This work consists of cleaning and coating metal surfaces of existing steel structures and also includes containing, storing, and disposing of spent materials. Clean and coat all metal surfaces of existing steel structures including downspouts, sign supports and all brackets. Exclude railings, chain link fencing, and utility conduits, including associated brackets and hangers.

Unless authorized by the Engineer, field coating is not allowed from October 1 through May 1 in Superior and North Regions nor from October 15 through April 15 in the remaining Regions. Coating temperature requirements shall be according to section 915.

Cleaning criteria and other coating terms are defined in the Society for Protective Coatings (SSPC) *Steel Structures Painting Manual*, Volumes 1 and 2.

The Contractor shall furnish and erect scaffolding to allow inspection of the steel before and after coating. This scaffolding shall not damage the structure and shall comply with Michigan Occupational Safety and Health Administration (MIOSHA) rules.

Rubber rollers, or other protective devices used on scaffold fasteners, shall meet the approval of the Engineer. Metal rollers, clamps or other fasteners that could mar or damage the steel or coating shall not be used.

**715.02 Materials.** Materials shall meet the following requirements.

Bridge Coating System .....	915
Epoxy Grout .....	914

All blast cleaning will be done using an approved low dusting abrasive, steel grit or shot, or a combination of these. Abrasives shall be selected from the Qualified Products List.

Tie coat for galvanized surfaces shall be recommended by the coating manufacturer.

### 715.03 Construction.

- A. **Protection of Work and Environment During Cleaning Operations.** In addition to compliance with federal, state, and local laws, the Contractor shall comply with the following requirements when cleaning painted or unpainted bridges.
- 1. Required Training Program.** The Contractor shall have a written training program covering the handling and storage of hazardous waste. A copy of this program must be given to the Engineer prior to starting any cleaning and one copy must also be kept at the project site by the Contractor.
  - 2. Required Worker Training.** Every employee of the Contractor who will be involved in either cleaning the bridge (i.e., generating waste) or in the cleanup, handling, and storage of the spent materials must have training in the management of hazardous waste required by the Resource Conservation and Recovery Act 42 USC 6901 et. seq.

and 40 CFR 265.16. All Contractor personnel doing this type of work must have training records available on the project site.

3. **Hazardous Waste Contingency Plan.** The Contractor doing cleaning and thereby generating, handling, and storing hazardous waste shall have a contingency plan meeting the requirements of 40 CFR Part 265, Subparts C and D. This plan must address how accidental spills or releases to the environment will be contained and cleaned up. The plan must list an emergency coordinator along with a telephone number where this person can be reached 24-hours a day, seven days a week in case of an accident.

A copy of the contingency plan must be given to the Engineer and one copy shall also be kept at the project site by the Contractor.

4. **Labeling of Spent Material Containers.** The Contractor shall provide and place the required labeling for hazardous waste storage containers. These containers must be labeled prior to their use for hazardous waste storage and must list the starting date when waste is placed into each container. Labels must be visible without the need to move containers. Disposal is required within 90 days maximum from the time of the starting date. The EPA generator number will be supplied by the Engineer. (See Act 451, PA 1994, Part 111 Hazardous Waste Management, and Rule R299.9306, (1), (b) and (c)).
5. **Weekly Inspection Log.** Contractors who temporarily store hazardous waste on a project site shall keep an inspection log for the storage area and containers. This log shall be kept on-site by the Contractor and updated weekly, acknowledging that the Contractor has inspected the security of the storage. (See 40 CFR 265.174)
6. **On-Site Records.** The Contractor shall keep the following records on-site and available until blast cleaning work is completed and spent material has been removed from the job: hazardous waste training program, worker training records, hazardous waste contingency plan, weekly inspection log, waste characterization reports, and waste disposal manifests.

These records shall be kept near the hazardous waste storage area and be readily evident and available to all persons for inspection and review. It is suggested that they be placed in a closed barrel adjacent to the hazardous waste storage and be clearly marked for content. The barrel should be accessible to any inspection or emergency personnel.

7. **Storage in Gondolas, Roll-off Boxes, or Barrels.** Storage at the bridge site of spent materials, hazardous or nonhazardous, shall be done in a manner that is secure and not subject to exposure to the weather, accidental spills, or vandalism. The Engineer shall review the proposed storage area before cleaning operations begin. The location of storage containers shall be a gradually sloped, free draining area, not immediately adjacent to a traffic lane, water course or direct drainage ditch or structure. Storage containers shall be placed to prevent them from standing in any water that does not run off.

Waste containers shall be closed and properly covered except during the actual addition or removal of spent materials. Upon the completion of the placement of spent materials, they shall be covered.

All spillage that occurs on the ground during the placement of the spent materials into the storage containers must be immediately cleaned up according to the Contractor's hazardous waste contingency plan.

- a. **Gondolas or Roll-off Boxes.** In addition to any cover which is part of the gondolas or roll-off boxes, they shall be covered at all times with a continuous, water repellent tarpaulin. The tarpaulin shall be given a positive slope or rise over the container by use of support ribs or other means arching up over the container top. No water shall be allowed to pond on the tarpaulin. Each container shall be properly labeled as hazardous waste or nonhazardous waste. Each label shall be properly filled out including the beginning accumulation date.
  - b. **Barrels.** Barrels shall be sealed with bolt locking rims after they have received hazardous waste. Barrels shall be elevated on pallets and arranged for storage in single or double rows, allowing access to all barrels for inspection and viewing of the labels. Each barrel shall be labeled as hazardous waste or nonhazardous waste. The label shall be properly filled out including the beginning accumulation date. The rows of barrels shall be bound together by rope, cable, or binding straps to prevent them from easily tipping over. The rows of barrels shall be covered by waterproof tarpaulins, securely held in place. (See 40 CFR 265, Subpart I; Act 451, PA 1994, Part 111 Hazardous Waste Management, Rule R299.9306, (1), (e) and (f); 40 CFR 264.175 (c)).
8. **Disposal of Spent Material.** Spent material collected and stored in waste containers will be sampled and tested by the Contractor according to the Environmental Protection Agency, Toxicity Characteristic Leachate Procedure (TCLP) test. The test results are required to characterize the spent material for disposal. The Engineer may sample and test the spent material at any time during the life of the project.

The Contractor shall appropriately dispose of the spent material either as a hazardous waste at a licensed hazardous waste disposal facility or as nonhazardous waste at an approved Type II (Act 451, PA 1994, Part 115, Solid Waste Management) landfill.

All waste shall be removed and disposed of within 90 days maximum from the start date of accumulation. The Department reserves the right to remove and dispose of any waste (hazardous or nonhazardous) and back-charge the Contractor for the work when the Contractor does not remove waste in a timely manner. (Act 451, PA 1994, Part 111 Hazardous Waste Management, Rule R299.9306; 40 CFR 262).

9. **Contractor Responsibility for Method of Operations.** The Contractor is required to comply with all federal, state and local laws. This specification is intended to set forth minimum steps to avoid violating environmental laws. It remains the responsibility of the Contractor to determine whether more than these minimum steps may be required and then, at the expense of the Contractor, to perform the work required by this contract in

whatever manner may be required to comply with applicable laws. The Contractor is liable to the Department for any fines, costs, or remediation costs incurred by the Department as a result of the Contractor's failure to be in compliance with this specification and all federal, state and local laws.

## **B. Containment Requirements.**

1. **General Requirements.** All bridges are to be cleaned using total enclosure as described herein. Pedestrian, vehicular, and other traffic upon or underneath the structure and all workers shall be protected as provided in Subsection 104.10. The Contractor shall be responsible for any damage caused to vehicles, persons, property, or the environment according to subsection 107.07. protective measures shall include a barrier system that protects against direct or indirect blasting of vehicles, water vessels, and pedestrians; prevents abrasive materials and debris from falling on the traveled portions of the pavement or into waterways; and prevents the spreading of abrasive materials and debris into any area where a traffic hazard would be created.

Total containment of portions of the bridge during cleaning and vacuuming is required. The Contractor shall contain the paint chips, abrasive particles, dust, and debris, herein referred to as "spent material," resulting from the cleaning operations. The containment shall be achieved by using tarpaulins or other approved materials to totally enclose the portion(s) of the structure being cleaned. Tarpaulins shall be made of an airtight material, and shall be tightly and continuously secured at the seams. Burlap or open web materials are not allowed. The enclosure shall extend from the bottom of the deck down to the ground level or to the level of a solid work platform and shall be fastened securely to prevent lifting or opening by the wind. Seams and laps between tarpaulins or sheeting shall be clamped together along the length of the seams or laps to prevent any material or dust from escaping the enclosed area. Other methods of containment may be used if approved by the Engineer.

The design of the enclosure and the air flow and dust filtering equipment required is the responsibility of the Contractor. The performance of the Contractor's design will be judged by the Engineer on its ability to prevent any visible release of spent materials, to the environment while providing adequate ventilation to insure worker safety.

The enclosures shall have air moving equipment attached capable of maintaining a negative pressure condition inside. This pressure shall be sufficient to prevent any spent material from leaving the enclosure during the cleaning. It shall also be capable of maintaining sufficient air flow through the enclosure to provide adequate visibility and a safe working environment for the blasting operators. Limited air intake openings will be allowed in the enclosure during the periods when the air moving equipment is operating. All air exhausted from the enclosure shall be filtered by means of a portable truck mounted filtering system or dust collectors. All filters or dust collectors shall be cleaned before being brought to the project site and shall be cleaned before removal from the project site. The Contractor shall obtain all required Department of Environmental Quality and local air quality and noise ordinance permits for operation of the air filtering equipment at the bridge site. No dust discharge shall be allowed from

the exhausted air from the filters, dust collectors, or any vacuum truck used for pickup of spent materials.

Ground cloths shall be placed under the entire enclosed area and shall extend at least 10 feet beyond the enclosure edges (but not into an open traffic lane). These ground cloths shall have all seams or laps sealed. They shall be used to collect all the spent material that settles to the ground or onto work platforms.

Whenever the protective devices are not serving their intended purposes, work shall be suspended until corrections are made. The Engineer shall shut down cleaning operations and require the Contractor to immediately clean up spent materials within the enclosure when threatening weather conditions, such as high winds or heavy rain, exist that could cause a release of spent material to the surrounding environment. The Engineer will make this determination.

Auxiliary metal halide lighting shall be used within the enclosure where necessary to illuminate the active work surface to a minimum of 50 foot-candles. This is required for clear viewing of all cleaning, painting and inspection operations as directed by the Engineer.

The Contractor shall take measures to prevent the release of spent material from the tarpaulins and other components of the containment enclosure during its relocation or removal. This may require mechanical cleaning or vacuuming of the dust contaminated portions prior to moving. Workers shall be adequately protected from exposure to lead-bearing dust during this moving or removal work.

2. **Bridges Over Waterways.** In addition to the containment measures described in subsection 715.03.B.1, the Contractor shall provide the following measures when cleaning bridges over waterways.

The Contractor shall provide a stable barge located in the water directly under the area enclosed for cleaning. The barge shall be sized and secured to provide sufficient freeboard and stability to preclude the possibility of capsizing or sinking. Equipment and material loads shall be evenly distributed on the barge. The containment enclosure shall extend down to the level of the barge and shall be secured to prevent any release of spent material into the waterway. The surface of the barge shall be covered with ground cloths to allow collection of all spent materials.

If it is impracticable to use a barge, the Contractor shall erect a temporary work platform under the containment enclosure to collect all spent materials. The containment enclosure shall extend down to the level of the temporary platform and shall be secured to prevent release of spent material. Plans for the proposed work platform shall be submitted, in writing, to the Engineer for review prior to installation.

A floating boom shall be stretched across the waterway 200 feet from the bridge, on the downstream and down wind side of the bridge to provide secondary containment. Any spent material which accumulates at these booms shall be collected, stored, and disposed of in the same manner as other waste generated by the cleaning operation.

3. **Cleanup and Storage of Spent Materials.** For all structures, spent materials shall be cleaned up within the containment enclosure daily and before any prolonged work stoppage, such as weather interruptions. This shall be accomplished by cleaning the ground cloths required to collect all material. Spent materials released outside the enclosure shall be cleaned up immediately according to the Contractor's hazardous waste contingency plan.

Spent materials shall be placed in suitable waste storage containers located at the bridge.

#### C. **Cleaning Structures.**

Shield and protect all utility pipes and conduits that are not specified on the plans to be cleaned and coated. Notify all affected utility companies a minimum of 48 hours before blast cleaning operations are started. Shield or mask from blast cleaning operations freshly coated surfaces, railings, galvanized fencing, appurtenances, and adjacent concrete. Coated surfaces damaged by blasting shall be wire brushed or, if visibly rusted, recleaned to a near-white or bare metal condition. Vacuum and reprime the wire brushed or blast cleaned surfaces.

Remove and dispose of loose concrete from the bottom of the deck slab, fascia, concrete diaphragms, and perimeter of beams at dependent backwall. Limit concrete removal to that which is accessible and can be removed with hand-held, nonpower tools.

Before cleaning, scrape surfaces to remove dirt or debris and remove all oil or grease deposits as per SSPC SP 1. Clean all surfaces to SSPC-SP 10 (near-white) or SSPC-SP 11 (bare metal). Grind any fins, tears, slivers, and burred or sharp edges on steel members to SSPC-SP 11 bare metal finish. Scaling hammers may be used to remove heavy scale on existing structures, but chipping hammers shall not be used. The visual standard from SSPC-VIS 1, SSPC-SP 10 and/or SSPC-VIS 3, SSPC SP 11 that corresponds to the initial rust condition will be used to check for acceptable steel cleanliness.

All surfaces to be coated must have a uniform profile of 1 mil to 2.8 mils measured using extra coarse Testex Replica Tape, except A 588 structures. For A 588 structures, the Contractor shall supply a non-blasted piece of A 588 steel at least one square foot and 1/4 inch thick and clean it on site using the proposed cleaning procedures. The Engineer will determine if the profile on this piece is acceptable before cleaning of A 588 steel may begin.

All abrasive and coating residue shall be removed from steel surfaces with a commercial grade vacuum cleaner equipped with a brush-type cleaning tool, or by double blowing with partial vacuuming. If the double blowing method is used, the top surfaces of all structural steel, including flanges, longitudinal stiffeners, splice plates, hangers, etc., shall be vacuumed after the double blowing operations are completed. The air line used for blowing the steel clean shall have an in-line water trap and the air shall be free of oil and water as it leaves the air line. Keep the steel dust free and prime within eight hours of cleaning.

#### D. Coating Structural Steel.

1. **Applying the Coating.** After the cleaned surface has been approved by the Engineer, spray apply the coatings using the manufacturer's recommended nozzles and pressures. The range of dry film thicknesses are 4 mil to 10 mils for primer, 3.5 mil to 9 mils for intermediate and 1 mil minimum for the top coat. Vacuum any accumulated dirt from primed surfaces before subsequent coats. If the Engineer decides the surface is unfit for further coating, scrub the surface with a commercial detergent, rinse with water, and allow to dry for a minimum of 24 hours before continuing.

Recoat areas having less than the required minimum primer dry film thickness. Use a magnetic film thickness gauge to measure the dry film thickness. Calibrate the gage with plastic shims, approximately the same thickness as the minimum dry film thickness, placed on a smooth section of newly cleaned steel.

The application of the intermediate and top coat shall be sufficient to provide complete coverage with uniform color and appearance. If the maximum dry film thickness exceeds the maximum, the area(s) shall be sanded to a thickness below the maximum and cleaned before applying subsequent coats.

If coating application results in runs, bubbles, or sags, apply the coating using multiple passes of the spray gun, separating each pass by several minutes. Any areas exhibiting runs, bubbles, sags, or "mud-cracking" shall be corrected according to SSPC-PA 1.

Remove all dry spray, by sanding if necessary.

All metal coated improperly, or with unsatisfactory or unauthorized material, shall be corrected as directed by the Engineer.

All galvanized components, including galvanized nuts, bolts, and washers, shall be cleaned to SSPC-SP 1 condition, given a tie coat, and then coated with the intermediate and top coat. The tie coat may be brushed on. Apply the tie coat according to the manufacturer's recommended coating thickness.

2. **Coating Faying Surfaces and Connections.** All new connections, and disassembled connections in existing structures, shall be coated as outlined below. Faying surfaces are defined as surfaces internal to a connection that bear on an adjacent surface and shall be prime coated in the same manner and to the same thickness as the adjacent structural steel. The faying surface shall be masked during subsequent coating operations.

The connection shall be vacuumed again just prior to reassembly. If for any reason this vacuuming does not remove all the accumulated dust and dirt, or if in the opinion of the Engineer the surface is unfit for bolting, the surface shall be scrubbed with a mild detergent solution (any commercial laundry detergent), thoroughly rinsed with water, and allowed to dry before the connection is assembled. After the connection is assembled, blast clean and coat the exposed areas of the connection. This cleaning

and coating may be done immediately after erection or when the remainder of the structure is blast cleaned and coated.

3. **Cure times for Coatings.** Minimum cure times are specified in subsection 915.04.A. Follow the manufacturer's recommended maximum cure time, except that no more than 21 calendar days are permitted between coats. If the maximum time between coats is exceeded, all newly coated surfaces shall be blast cleaned and recoated, according to this specification, at the Contractor's expense.
4. **Protection of Work and Environment during Coating Operations.** Protect all portions of the structure (including superstructure, substructure, slope protection, and highway appurtenances) from splatter and overspray of coating material. Shield all utility pipes and conduits that are not specified to be coated.

Protect pedestrian, vehicular, water vessels, and other traffic as provided in subsection 104.10. The Contractor shall be responsible for any damage to vehicles, persons, or property caused by this operation. Whenever a protective device is not serving its intended purpose, the Engineer may suspend work until corrections are made.

5. **Stenciling Requirement.** At the completion of the coating, stencil the structure number (i.e., S01-41029), the completion date (month and year) and the coating type (4) on to the structure in 4-inch numbers (i.e., 6/03-4). On all A 588 steel structures, stencil "A 588" just above the completion date. For partial painting projects the coating type designation will be preceded by the letter 'P' (e.g., 6/03-P4).

Use black urethane spray paint for stenciling.

Stencil the numbers on the outside of each fascia beam at the approaching traffic end of the structure. The markings shall be at least 10 feet above ground level or the fill slope elevation and at least 10 feet from the abutment.

If the fascia beam is not completely coated, stencil the designation on the outside of each fascia beam on the approaching traffic side in the lower right corner of the newly painted section. Put the markings completely within the partial coating limits, no closer than 3 inches above the bottom flange and with the stenciling ending within 3 inches of the right edge of the newly painted area.

If these locations are not applicable to the structure, the Engineer will designate the location of the markings.

- E. **Removal and Replacement of End Diaphragms.** At locations indicated on the plans, disconnect each end diaphragm from the connecting plates or angles by removing existing bolts or rivets. Divert traffic on the bridge from the unsupported bay until shoring is in place. Place shoring to support the concrete deck while the diaphragm is removed.

Clean the diaphragm and portions of the structure that are inaccessible with the diaphragm in place. Apply the prime coat. Allow the prime coat to cure for a minimum of 12 hours at

50 °F or above. Mask the faying surfaces and the top of the diaphragm top flange. Apply the intermediate coat.

After the intermediate coat is dry to the touch, coat the top of the diaphragm top flange with epoxy grout. Immediately bolt the diaphragm in place according to subsection 707.03.D.7.

Clean the galvanized bolts to a SSPC-SP 1 condition and apply a tie coat. Apply the tie coat according to the manufacturer's recommended coating thickness. Then coat the bolts and any missed areas with an intermediate coat.

Apply the top coat to all areas, including areas behind the reinstalled diaphragms.

- F. **Cleaning, Coating and Installing New Hanger Assemblies.** The coating system applied to the joint area shall be selected from the Qualified Products List and shall meet the required cure time. The system selected does not have to be by the same manufacturer selected for coating the remainder of the bridge.

The following modifications to the cleaning and coating requirements shall apply to the girder ends, within 3 feet each side of the centerline of the pin holes or to the nearest stiffener.

1. The joint area shall be enclosed according to subsection 715.03.B except that negative pressure within the containment is not required. During coating and curing the containment may be removed when the temperature is 50 °F or above.
2. The joint area shall be blast cleaned to a white metal finish, as defined in SSPC-SP 5 (see SSPC-VIS 1 Visual Standards), with a surface profile between 1 mil to 2.8 mils.
3. The joint area shall be enclosed and heated, in a manner acceptable to the Engineer, to maintain the temperature of the steel and the air at 50 °F or above. If the ambient air temperature is at or above 50 °F at the time of cleaning and application and curing of the coating, the enclosure of the joint will not be necessary. When enclosure of the joint area is required, all three coats shall be applied prior to removing the enclosure. Coating shall not be applied when the relative humidity exceeds 90 percent.
4. The primer coat shall be applied with spray equipment and cured at or above 50 °F for a minimum of 12 hours. The dry film thickness shall be 4 mils to 6 mils.
5. The epoxy intermediate coat shall be applied with spray equipment and shall be allowed to cure at or above 50 °F for a minimum of 1 hour, and until dry to the touch. The pin holes shall be masked before the intermediate coat is applied.
6. The new pins and link plates may be installed when the epoxy intermediate coat has cured for a minimum of one hour and is dry to the touch. The epoxy intermediate coat cure shall be continued at or above 50 °F for a minimum total time period of 12 hours. The dry film thickness of the epoxy intermediate coat shall be 3.5 mils to 6 mils.

7. The urethane top coat shall be applied with spray equipment to the assembled joint areas with the temperature at or above 40 °F. It shall be applied in sufficient thickness to provide complete coverage and a uniform appearance.

The areas behind the assembled link plates shall be coated with urethane to the extent possible. This final coat shall be applied as soon as possible after the epoxy intermediate coat has cured, not to exceed 21 days. If the maximum dry film thickness exceeds the maximum, the area(s) shall be sanded to a thickness below the maximum and cleaned before applying subsequent coats. If the maximum time between coats is exceeded, all newly coated surfaces shall be blast cleaned and recoated, according to this specification, at the Contractor's expense.

The area of the girder that was coated after removal of the hanger assembly, including the new pins and link plates, shall be boxed in or otherwise securely covered prior to blast cleaning and prime coating of the girders. The box or covering shall be removed prior to topcoating the girders.

Girder areas, which have been painted prior to blast cleaning the hanger areas, shall be protected as approved by the Engineer. The protection shall prevent damage to the coating during the blast cleaning and coating of the 6-foot joint area.

**715.04 Measurement and Payment.**

<b>Contract Item (Pay Item)</b>	<b>Pay Unit</b>
Steel Structure, Cleaning, Type 4, <u>(Structure Number)</u> .....	Lump Sum
Steel Structure, Cleaning, Partial, Type 4, <u>(Structure Number)</u> .....	Lump Sum
Steel Structure, Coating Type 4, <u>(Structure Number)</u> .....	Lump Sum
Steel Structure, Coating, Partial, Type 4, <u>(Structure Number)</u> .....	Lump Sum
End Diaphragm, Rem and Replace .....	Each
Protective Shield, Utility Pipe .....	Foot

- A. Protection of work and environment during blast cleaning will be considered included in the pay item **Steel Structure, Cleaning, Type 4** or **Steel Structure, Cleaning, Partial, Type 4**. This includes materials, equipment, barges or temporary platforms, enclosures, and associated costs included in the requirements for the protection of work and environment. The cost for handling, storage, testing, transporting, and disposal of spent materials (hazardous or nonhazardous) will be considered included in the pay item **Steel Structure, Cleaning, Type 4** or **Steel Structure, Cleaning, Partial, Type 4**. There shall be no additional compensation to the Contractor as a result of any suspension of the work by the Engineer as authorized in these specifications.
- B. When called for on the plans, cleaning and coating existing utility conduits (including all brackets and hangers), are part of the work and will not be paid for separately. **Protective Shield, Utility Pipe** includes material, equipment, and labor necessary to shield the utility pipe or conduit during the blast cleaning and painting operation. Where pipes or conduits are clustered in groups of two or more, the measured pay length will be of the cluster rather than of the individual pipes.

- C. **End Diaphragm, Rem and Replace** includes the cost of shoring the structure while the slab remains unsupported. It also includes furnishing galvanized high strength bolts and furnishing and applying the epoxy resin to the diaphragm flange. The cost of cleaning and prime coating the diaphragm will be included in **Steel Structure, Cleaning, Type 4** and **Steel Structure, Coating, Type 4**; or **Steel Structure, Cleaning, Partial, Type 4** and **Steel Structure, Coating, Partial, Type 4**.
- D. Labor and equipment required to remove loose concrete is included in payment for **Steel Structure, Cleaning, Type 4** or **Steel Structure, Cleaning, Partial, Type 4**.
- E. Stenciling is part of the work and will not be paid for separately.
- F. Coating of faying surfaces is included in **Steel Structure, Coating, Type 4** or **Steel Structure, Coating, Partial, Type 4**.