

CONCRETE WASTE MANAGEMENT

DESCRIPTION - The purpose of this specification is to set forth procedures and practices designed to eliminate the discharge of concrete waste materials to storm drainage systems, drainage areas, streets or watercourses, which shall be required of the contractor.

APPROPRIATE APPLICATION OF BMP - Concrete waste management procedures and practices will be implemented on construction projects as follows:

- Where concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Where slurries containing Portland cement concrete (PCC), asphaltic concrete (AC) or bituminous concrete (BC) are generated, such as from saw cutting, coring, grinding, grooving and hydro-concrete demolition.
- Where concrete trucks and other concrete-coated equipment are washed on-site, when approved by the Resident Engineer or Construction Inspector.
- Where mortar-mixing station exist.

AWARENESS / ENFORCEMENT

- Contractor's and / or permit holder's superintendent or representative shall oversee and enforce concrete waste management procedures.
 - Discuss the concrete management techniques described in this BMP (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.
- The site superintendent shall make drivers aware of the presence of the concrete waste management facilities. The site superintendent should post signage indicating the location and designated use of the concrete waste management areas, and provide careful oversight to inspect for evidence of improper dumping of concrete waste and wash water.

IMPLEMENTATION

- Contractors, private individuals, public agencies, etc. using concrete material, shall incorporate requirements for concrete waste management into material supplier and subcontractor agreements. Include requirements in contracts with concrete delivery companies that drivers must use designated concrete washout facilities.
- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- Cover the structures before predicted rainstorms to prevent overflows.
- Monitor on site concrete waste storage and disposal procedures at least weekly or as directed by the Resident Engineer or Construction Inspector.

- In St. Louis County, the contractor is required by Missouri State Law (10 CSR 10-6.170) and County Ordinance (612.340) to control fugitive dust blown from the construction site, signal installation, etc. Dust control, including saw-cut material etc., on the construction site shall be monitored for safety purposes and to prevent nuisances. The contractor / permittee shall apply reasonable measures to control dust and particulate matter (of any size or source) due to roadway / construction traffic, grading, clearing and grubbing, building demolition, saw-cutting etc. from migrating off the site of origin. Operations residue from grinding, saw-cutting etc. should be picked up (cleaned-up) by means of a vacuum device or swept up. Compressed or blown air may be used to clean negligible residual dust that the vacuum or sweeping did not clean up, as long as the above dust control procedures (and law and ordinance) are met. Saw cutting residue, slurry or dry, should not be allowed to enter storm drains or watercourses. Saw cutting residue should not be allowed to flow across the pavement and should not be left on the surface of the pavement when traffic is present, when precipitation is anticipated before cleanup or overnight. In approved locations, saw-cut slurry may flow into the dirt (where it can soak into the ground) adjacent to the saw-cutting operation and be buried, on site, 2' minimum below finished grade. Other dust control and clean-up procedures may be acceptable as approved by the Engineer or St. Louis County. See additional Concrete Waste Management requirements in this Manual.

WASHOUT AREA PROTOCOL

- Contain concrete washout on site or take it offsite for disposal in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- For onsite washout:
 - Locate washout area on-site at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough to contain liquid and solid waste. Locate it in a dirt area where the liquid portion of the washout can soak into the ground. They are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Discontinue use of the washout once it reaches 75% capacity. Washouts should be sized to handle solids and wash water to prevent overflow. It is estimated that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump. Implement a maintenance schedule for washout areas.
 - Temporary washout facilities should have pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.
 - Wash out wastes into the pit where the concrete can set, be broken up, and used on site; or buried on site; or disposed of properly.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose of in the trash.
- Do not place concrete wash water in a pit that is connected to the storm drain system or that drains to nearby waterways.

- Locate concrete washout facilities in an area that allows convenient access for concrete trucks, preferably near the area where the concrete is being poured. Appropriate gravel or rock should cover paths to concrete washout facilities if the facilities are located on undeveloped property. These areas should be far enough away from other construction traffic to reduce the likelihood of accidental damage and spills. The number of facilities you install should depend on the expected demand for storage capacity. On large sites with extensive concrete work, place washouts in multiple locations for ease of use. If the dried concrete washout is buried on the site it shall have a 2-foot cover minimum. The 2-foot cover shall match with surrounding finished grade.
- Concrete washed out in areas other than those designated for such activity, shall be cleaned up by the contractor.
- Install signage adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
- Perform washout of concrete mixers, delivery trucks and other delivery systems in designated areas only.
- Wash out concrete from concrete pumper bins into concrete pumper trucks and discharge into designated washout area.
- Equipment that cannot be easily moved, such as concrete pavers, shall only be washed in designated areas that do not drain to waterways or storm drain systems.
- Backfill and repair holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities.
- Wash out concrete on site into a future designated final concrete pour location. This location cannot be within 50 feet of a storm or sanitary sewer; or water course; or where it can drain off site. The washout cannot jeopardize the integrity of the final concrete pour. Concrete to be removed from the site shall be disposed of in conformance with the provisions in Standard Specification Manual, Section 202, all as directed by the Engineer. No additional payment will be made for complying with the above specification.
- A self-contained and watertight container may be used to control, capture, and contain concrete wastewater and wash-out material. The container must be portable and temporary, damage resistant, protect against spills and leaks, and sized to handle solids and wash water to prevent overflow. The container should be emptied and cleaned when 75% of its capacity is reached. After all liquids evaporate or are pumped or vacuumed, and the remaining slurry solidified, the Contractor may bury the solids on site. On County Highway Projects the solids may be buried on site if approved by the Engineer. In either case, solids shall be buried a minimum of 2 feet below finished grade. Disposal of container contents that are removed from the site shall be made at an approved landfill. In order to prevent overflows caused by natural occurrences and to provide security for safety purposes and against acts of vandalism, the container shall be covered at the end of each workday and remain covered until the beginning of the next workday. The cover shall remain on site with the container at all times. Container shall be free of liquids during any on-site relocation process or transport to another site. On County Highway projects, location(s) for the container shall be approved by the Engineer.

TYPICAL DETAIL - 806-46.03