

TIRE SHREDS, TYPE B

****From Cabot BRO 1446(27)**

xx. DESCRIPTION. This work shall consist of transporting and placing Type B tire shreds at the locations shown in the Plans in accordance with these specifications and as directed by the Engineer.

xx. MATERIALS.

(a) Source. Type B tire shreds shall be acquired from Palmer Shredding in Ferrisburg, VT [Tel.: (802)453-6467] or other locations approved by the Agency.

(b) General. Tire shreds shall be made from scrap tires. The shreds shall be produced using a shearing process; tire chips produced using a hammer mill process will not be acceptable. Tire shreds shall be free of any contaminants such as oil, gasoline, diesel fuel, grease, remains of tire chips previously subjected to a fire, etc., which could leach into the groundwater and/or create a fire hazard. Acquired tire shreds shall also be free of soil, metal fragments, crumb rubber, wood chips, or other foreign matter.

The tire shreds shall have less than 1 percent by mass (weight) of metal fragments that are not at least partially encased in rubber. Metal fragments that are partially encased in rubber shall protrude not more than 25 mm (1 inch) from the cut edge of the tire shred on 75 percent of the pieces (measured by weight) and no more than 50 mm (2 inches) on 100 percent of the pieces (measured by weight).

(c) Gradation. Type B tire shreds shall have at least one side wall severed from the tread of each tire. The gradation shall be measured in accordance with AASHTO T-27, "Standard Method of Sieve Analysis of Fine and Coarse Aggregate"; except that the minimum sample size shall be 12 kilograms (30 pounds). The gradation shall meet the requirements of the following table:

Required Gradation for Tire Shreds, Type B

Sieve Designation	Percentage by Mass (Weight) Passing Square Mesh Sieves
450 mm (18 inch)	100
305 mm (12 inch)	90 to 100
203 mm (8 inch)	75 to 100
76 mm (3 inch)	0 to 50
38 mm (1.5 inch)	0 to 25
4.75 mm (No. 4)	0 to 1

(d) Sampling. When tire shreds are being produced for the project by the Contractor, tire shred samples shall be taken by the Engineer during startup of tire shred production and then random samples will be taken one to two more times per week during tire shred production. Additional samples may be taken if deemed necessary by the Engineer. For the purpose of obtaining samples, the Contractor shall provide access to the discharge conveyor and the tire shred stockpiles, as requested by the Engineer. Tire shreds that do not meet the specifications shall be reprocessed to produce tire shreds meeting the specifications or shall be

removed by the Contractor utilizing an approved disposal method at no additional cost.

Geotextile fabric shall meet the requirements of Section 649 for Geotextile Under Stone Fill.

- xx. GENERAL CONSTRUCTION REQUIREMENTS. The Contractor shall be responsible for maintaining the tire shreds free of all contaminants from the time the tire shreds are retrieved from the storage site until the shreds are placed, compacted, wrapped in geotextile, and covered with low permeability fill as shown on the Plans. Tire shreds which become contaminated as a result of activities from this Contract, or which are otherwise deemed unacceptable by the Agency, shall be removed from the site, legally disposed of by the Contractor, and replaced with acceptable tire shreds by the Contractor at no additional cost to the Agency.

It should be noted that recently placed tire shreds are susceptible to contamination from construction equipment operating over the surface of the tire shred fill. The Contractor shall take appropriate precautions to prevent contamination of the tire shreds. Tire shreds that become contaminated with soil, metal fragments, crumb rubber, organic material, other foreign matter, or such that the quantity of material passing the No. 4 sieve exceeds 1 percent by weight, shall be reprocessed to produce tire shreds meeting the specifications or shall be removed and replaced by the Contractor at no additional cost.

Tire shreds shall not be stockpiled overnight on the site prior to placing as abutment backfill.

A continuous access roadway capable of providing access by fire trucks shall be provided along one side of the tire shred placements. Construction and maintenance of these areas will be considered incidental to the work under this Section.

- xx. SUBGRADE PREPARATION. Excavation and subgrade preparation shall be performed in accordance with Section 204.

- xx. INSTALLATION. Tire shreds shall be placed over the full width of the section. The tire shreds shall be spread with track-mounted bulldozers, rubber-tired motor graders, backhoes, or other equipment as needed to obtain a uniform layer thickness. Track-mounted construction equipment is generally preferred, as the tire shreds have a tendency to puncture the tires of rubber-tired equipment. The in-place tire shreds shall be well-mixed with no pockets of either fine or coarse tire shreds. Segregation of large or fine particles will not be allowed. Tire shred courses shall not be placed on frozen ground.

At the end of the workday, the Contractor shall cover the exposed tire shred course with the approved geotextile fabric, even if the tire shred cell is not complete. The geotextile shall be removed the following workday and placing operations shall continue.

- xx. SHAPING AND COMPACTING. Each lift of tire shreds shall be compacted with six passes of a vibratory smooth drum roller with a minimum static weight of 9070 kg (20 kips). Tire shreds adjacent to abutment walls shall be compacted with a walk-behind vibratory smooth drum roller, vibratory tamping foot, or vibratory pad-foot roller, with a minimum static weight of 680 kg (1.5 kips). Vibratory plate compactors are ineffective for compacting tire shreds and will not be allowed.

If the top of any tire shred layer becomes contaminated by the addition of foreign materials, the contaminated material shall either be re-

screened, or removed and replaced with the specified material at no additional cost.

The surface of each layer shall be maintained during compaction operations in such a manner that a uniform texture is produced and the tire shreds are firmly keyed.

The completed surface of the tire shred course shall be brought to a condition of uniform stability and compaction. To compensate for settlement of the tire shreds caused by the weight of the overlying soil, the top surface of the tire shreds shall be constructed 10 percent higher than the finished elevation shown on the Plans.

- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Tire Shreds, Type B) to be measured for payment will be the number of metric tons (tons) placed in the complete and accepted work, measured as delivered to the project.

The Contractor is required to weigh the tire shreds by certified scale and submit the certified scale receipts to the Agency. The measurement will be in vehicles at the point of delivery.

Tare weights of trucks hauling tire shreds shall be determined once daily. The tare weight thus found shall be used to determine the net load during that day. The tare weight of the truck shall be defined as the weight of the empty vehicle including the driver, but with no passengers.

- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Tire Shreds, Type B) will be paid for at the Contract unit price per metric ton (ton). Payment will be full compensation for picking up, delivering, and placing the material specified; for providing and maintaining continuous access roadway(s) as specified; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Removal, proper disposal, and replacement of any contaminated tire shreds shall be performed at no additional cost to the Agency.

Payment for excavation for tire shred placement and for geotextile fabric will be made under the appropriate Contract items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.680 Special Provision (Tire Shreds, Type B)	Metric Ton (Ton)