

Scrap Asphalt Shingles from Manufacture Waste (02/22/2010)

DESCRIPTION

Scrap asphalt shingles from a shingle manufacturing facility may be used in hot mixed asphalt mixtures produced under Mn/DOT Specification 2360.

MATERIALS

Scrap asphalt shingles may be included in both wear and non-wear courses to a maximum of 5 percent of the total weight of mixture. Only scrap asphalt shingles from manufacturing waste are suitable. The percentage of scrap shingles used will be considered part of the maximum allowable RAP percentage (see Table 2360.3-B2a). Refer to Section 2360.2 G1 to select a virgin asphalt binder grade. The ratio of added new asphalt binder to total asphalt binder shall be 70% or greater ((added binder/total binder) x 100 >= 70). A minimum of 1 spotcheck per day per mixture blend is required to determine new added binder.

All scrap shingle materials shall consist of organic felt, and/or fiberglass shingles, obtained from a shingle manufacturing facility.

All scrap shingle materials shall be processed to meet the following gradation requirements:

Gradation (% passing)	
Sieve Size	(% passing)
½ inch (12.5 mm)	100
#4 (4.75 mm)	90

The final product shall have no particle exceeding the maximum aggregate size allowed under Specification 2360. To conduct the gradation testing, a 500-700 gram sample of processed shingle material is air dried and then dry sieved over the 1/2" and #4 sieves and weighed.

Shingle asphalt binder content is to be determined by chemical extraction, Mn/DOT Lab Procedure 1851 or 1852. To determine the percent asphalt content, use a 500-700 gram sample.

For Mix Design, the following aggregate gradation may be used as a standard gradation in lieu of determining the shingle gradation by AASHTO T30.

Sieve Size	% Passing
3/8 inch (9.5 mm)	100
#4 (4.75 mm)	97
#8 (2.36 mm)	95
#16 (1.16 mm)	80
#30 (0.60 mm)	60
#50 (0.30 mm)	50
#100 (0.150 mm)	40
#200 (0.075 mm)	30

An aggregate bulk specific gravity (Gsb) of 2.650 may be used in lieu of determining the shingle aggregate Gsb by Mn/DOT 1205 (AASHTO T84).

Deleterious Materials

Scrap asphalt shingle shall not contain extraneous waste materials. Extraneous materials including, but not limited to, metals, glass, rubber, nails, soil, brick, tars, paper, wood, and plastics shall not exceed 0.5 percent by weight as determined on material retained on the 4.75-mm (No. 4) sieve. To conduct deleterious material testing, a representative 500-700 gram sample of processed shingle material is sieved on the #4 sieve and any

extraneous waste material retained on the #4 sieve is picked and weighed. The percent extraneous is based on the total sample weight.

CONSTRUCTION REQUIREMENTS

Scrap shingles from manufacture waste shall be stockpiled separate from other salvage material. Blending of scrap shingle material in a stockpile with other salvage material is prohibited. Blending of MWSS and TOSS is not allowed. Blending of a virgin sand material with the processed shingles, to minimize agglomeration of the shingle material, is allowed, but, the blended sand must be accounted for in the mixture design.

Before a Mixture Design Report for a particular mixture is authorized, the following shall be submitted, along with materials and paperwork required by Mn/DOT Specification 2360.3:

- I. Certification by the processor of the shingle scrap, as to the shingle scrap content and source. Certification forms are located at the back of this provision and also available from the Bituminous Office.

**MWSS Shingle Certification Sheet
PROCESSOR**

S.P. No: _____ **Project:** _____

Name: _____

Address: _____

Contact: _____

Phone: _____

We the undersigned, certify that all of the shingle scrap to be used on this project came from a shingle manufacturing facility or facilities and is not tear-off or re-roof material. We certify this shingle scrap material contains only shingles; no other material was added or introduced to this shingle scrap. We also certify the material consisted of only organic and/or fiberglass shingles and contains no asbestos greater than the NESHAP threshold or other hazardous material. Additionally, we certify the shingle scrap meets MnDOT gradation and deleterious material requirements for processed shingle scrap.

Processor of Shingle Scrap Material Date

Name of Contractor to Whom Processed Shingle Scrap Material Was Supplied

Manufacturer of Shingle Scrap:

Name: _____

Address: _____

Contact: _____

Phone: _____