

ROADWAY DEVELOPMENT SPECIFICATIONS
CITY OF BROOKFIELD, WI
SECTION 13.00
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13.01 STANDARD SPECIFICATIONS

Any reference to “Standard Specifications” in this section shall be considered as the State of Wisconsin, Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, current Edition, along with any supplements or modifications including ASP-6 unless otherwise noted.

13.02 ROADWAY CONSTRUCTION SCHEDULE

All roadway construction shall be completed between May 1st and November 15th unless otherwise approved by the Engineer.

13.03 ASPHALT MIX DESIGN

Asphalt mix designs shall be consistent with the Asphalt Pavement Section of these specifications unless the conditions warrant otherwise. The Contractor shall submit asphalt mix designs that are in accordance with State of Wisconsin specifications and are appropriate for the traffic volumes of each respective street or subdivision. Traffic volume data can be obtained from the Engineer.

13.04 PREPARATION OF THE FOUNDATION & PROOF ROLL VERIFICATION

The foundation shall be prepared and constructed so that it will have uniform density throughout. It shall be brought to the required alignment and cross section with equipment and methods adapted for the purpose. Upon completion of the shaping and compacting operations, the foundation shall be smooth, at required density, at the proper elevation and contour to receive the course to be constructed on it. The Contractor shall arrange with the Engineer for a proof roll verification of the subgrade prior to placement of the base course materials. The proof roll shall be done using a fully loaded tri-axle or quad-axle dump truck. If yielding/deflection occurs over an area, the Contractor shall be required to stabilize the subgrade by undercutting, geo grid application or other method as approved by the Engineer. Another round of proof roll verification shall be performed after placement of the base course materials. A passing proof roll shall be required prior to any paving.

Base material shall not be placed on a foundation that is soft or spongy or one that is covered by ice or snow. Base material shall not be placed on a dry or dusty foundation where the existing condition would cause rapid dissipation of moisture from the base material and hinder or preclude its proper compaction. Such dry foundations shall have water applied to them and shall be reworked or re-compacted if necessary.

13.05 GEOGRID

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In areas where yielding or displacement of the subgrade occurs, the contractor shall be required to stabilize the subgrade by undercutting, geogrid application or other method as approved by the Engineer.

Where ground stabilization geogrid is specified, the grid shall consist of a biaxial (i.e. Tensor BX Type 1 or comparable product) or triaxial (i.e. Tensor TriAx Tx130S or a comparable product).

13.06 ASPHALT PAVEMENT SECTIONS

Asphalt surfaces shall be sawcut full depth in neat straight lines a minimum of 12-inches back from the trench as directed by the Engineer to provide a neat straight line along the trench sides.

Asphalt roads for minor collector and local streets shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail No. RDY-1 and RDY-2 with a minimum 5.5" asphalt in two lifts (3.75" 3LT 58-28S with 3% Regressed Air Void Binder, 1.75" 4LT 58-28S with 3% Regressed Air Void Surface) over 8" of 1-1/4" Crushed Aggregate Base. Tack coat is required between lifts of asphalt pavement.

Asphalt roads for major collectors and arterials shall be constructed and/or replaced with a minimum 6" asphalt in three lifts (two lifts of 2" 3LT 58-28S with 3% Regressed Air Void Binder, one lift of 2" 4LT 58-28S with 3% Regressed Air Void Surface) over 10" of 1-1/4" Crushed Aggregate Base. Tack coat is required between lifts of asphalt pavement.

Commercial asphalt driveways shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail No. RDY-13 with 4" asphalt in two lifts (2-1/4" 3 LT 58-28S with 3% Regressed Air Void Surface, 1-3/4" 4LT 58-28S with 3% Regressed Air Void Surface) over 8" of 1-1/4" Crushed Aggregate Base. Tack cost is required between lifts of asphalt pavement.

Residential asphalt driveways shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail no. RDY-13 with a minimum of 3" asphalt in one lift (3" 5LT 58-28S with 3% Regressed Air Void Binder Surface) over 8" of 1-1/4" Crushed Aggregate Base.

Asphalt Paths shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail No. RDY-9 with a minimum of 3" asphalt in one lift (3" 5LT 58-28S with 3% Regressed Air Void Binder Surface) over 6" of 1-1/4" Crushed Aggregate Base.

For disturbance of existing pavement, the Contractor shall replace per thicknesses noted above regardless of the actual existing pavement thickness.

13.07 CONCRETE PAVEMENT SECTIONS

Concrete restoration shall be performed according to the requirements of Section 416 of the State of Wisconsin, Department of Transportation, Standard Specifications for Road and Bridge Construction. For disturbance of existing driveways, the Contractor shall remove and replace concrete driveway up to construction joint or as directed by the Engineer.

Commercial and residential driveways shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail No. RDY-12. Driveways to properties that have only one access must be constructed in halves to provide access to said properties at all times.

Concrete walk and Detectable Warning Fields shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail No. RDY-10 and No. RDY-11.

13.08 CONCRETE CURB AND GUTTER SECTION

Concrete curb and gutter shall be constructed and/or replaced in accordance to the City of Brookfield Standard Detail No. RDY-4, No. RDY-5, and the requirements of Section 601 of the State of Wisconsin, Department of Transportation, Standard Specifications for Road and Bridge Construction, 2003 Edition.

Once the curb has reached 3000 PSI, compressive strength, the contractor shall rough backfill behind the curb. In existing pavement areas, the Contractor shall backfill around the portion of the curb and gutter in the pavement area with 1-1/4" Crushed Aggregate Base to the bottom of the existing pavement. This material shall be mechanically compacted.

13.09 TACK COAT

An asphalt tack coat shall be applied to all existing paved surfaces on the same day the pavement will be placed, the tack coat material shall be type SS-1h, CSS-1, QS-1, QS-1h, CQS-1, CQS-1h or an approved modified emulsified asphalt conforming to Section 455 of the Standard Specifications .

In addition, the surfaces of structures, vertical faces of existing pavements and other surfaces in actual contact with asphalt mixes shall be painted with a thin, complete coating of tack coat to provide a closely bonded, watertight joint.

When an adjoining lane or abutting intersection is not placed the same day, the vertical edge shall receive tack coat before the adjacent asphalt is placed. Tack shall be applied between lifts.

The tack coat shall be applied at the minimum rate of .05 gallons per square yard on paved surfaces and .07 gallons per square yard on milled surfaces in order to achieve uniform coverage. At no time shall tack be placed on a wet or dirty surface.

The Contractor shall apply asphaltic tack coat to streets prior to placing asphalt pavement as directed by the Engineer. No tack coat shall be placed on the base course unless directed by the Engineer. The Contractor shall apply an asphaltic tack coat to all butt joints and all longitudinal joints meeting both existing pavements and new pavements on successive paving passes.

Apply tack coat only when the air temperature is 32°F or more unless otherwise approved by the Engineer. Before applying tack coat ensure that the surface is dry and reasonably free of loose dirt, dust, or other foreign matter. Do not apply if weather or surface conditions are unfavorable or before impending rains.

13.10 ASPHALT CONSTRUCTION

Asphalt binder mixtures shall be spread at a temperature between 230° F. and 325° F. and asphalt surface mixtures at a temperature between 250° F. and 350° F, or at the recommended mix design temperature. At no time shall the temperature fall below 180° F before the bituminous is rolled. When the air temperature is below 50° F., the binder mix shall be spread at a minimum temperature of 250° F.

All material shall be machine laid including driveway approaches except in areas that are inaccessible to machine spreaders. Where the contractor paves across a structure or in areas of curb and gutter, the contractor shall spread the mixture so that the finished asphalt surface is about ¼" higher than the edges of the structures and curb and gutter.

Immediately after the binder or surface course has been placed, it shall be compacted thoroughly and uniformly by rolling in conformance with Section 460.3.3 of the Standard Specifications. In all places inaccessible to the roller, compaction shall be done with a mechanical tamping machine.

The rolling shall continue until the bituminous course has obtained a density not less than the percent indicated on Table 460-3 of the Standard Specifications.

The Contractor shall allow for at least 12 hours of curing before applying addition lifts of asphalt, unless the engineer gives approval for less time.

13.11 QUALITY MANAGEMENT PROGRAM (QMP), ASPHALT MIXTURE

Shall be conducted in accordance with Section 460.2.8 of the Standard Specifications. Submit testing documents to the engineer by the end of the day that the material was produced.

13.12 HMA PAVEMENTS, MINIMUM REQUIRED DENSITY

HMA Pavements shall be compacted to the densities shown in Table 460-3 found in Section 460.3.3.1 of the Standard Specifications. In the event the aforescribed

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densities are not achieved, disincentive for HMA Pavement Density, per Section 460.5.2.2, of the Standard Specifications shall be applied.

Quality control testing shall be performed by the contractor to ensure minimum densities are being met. A quality control density technician shall be on-site during paving at all times to control and verify the compacting efforts being performed. Rolling patterns and compacting effort required to achieve minimum densities shall be the responsibility of the contractor and determined at the beginning of each day. Paving shall not be performed if no QC technician is on-site. Any failing densities shall be communicated to the inspector on-site immediately.

The City or its consultant representative will perform density testing as required to verify minimum densities are being achieved by the contractor.

QC testing documentation should be retained by the contractor and provided to the engineer when requested.