

Item No. 437S
Paver Grate Frames/Tree Grates and Frames

437S.1 Description

This item shall govern paver grate frames, tree grates and frames purchased or constructed and installed as herein specified at locations shown on the drawings or as established by the Engineer or designated representative. The grate installation shall consist of either a paver frame/grate, tree frame with grate or a grate with lighting openings as shown in the Drawings. The grates/frames shall be constructed and installed as shown in City of Austin Standards 437S-1 and 437S-2.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text the inch-pound units are given preference followed by SI units shown within parentheses.

437S.2 Submittals

The submittal requirements of this specification item may include:

Test results for each of the materials described herein when specifically identified on the Drawings and/or referenced in associated standard specification items and standard details.

A foundry certification shall be furnished stating that cast-iron grate samples representing each lot have been tested, inspected, and are in accordance with this specification.

Certification prior to supplying castings that there is an acceptable quality control program at the cast-iron grate producing foundry,

Confirmation that the paver grate frames are capable of supporting 90 lbs per sq. ft. (4.31 kPa) of dead load and 110 lbs. per sq. ft. (5.27 kPa) of live load.

Confirmation that the paver grate frames have been constructed in accordance with this specification and associated Standard Details.

437S.3 Materials

A. Cast Iron

Unless otherwise indicated, the Tree Grate shall be gray iron castings, manufactured from iron conforming to ASTM A48, Class 35B, as noted in section 3.1 of AASHTO M306. The material must be resistant to corrosion.

Castings shall be of uniform quality, free from sand holes, gas holes, shrinkage, cracks and other surface defects. Castings shall be ground smooth and well cleaned by shot blasting. As-cast dimensions may vary within accepted foundry tolerances as outlined in the Iron Castings Handbook published by the American Foundry Society, Inc. Nominally, casting dimensional tolerances shall be +/- 1/16" per foot (0.5 cm per meter).

B. Steel

Unless otherwise indicated, steel shall conform to ASTM A 36 as detailed in Item 720, "Metal for Structures".

C. Reinforcing Steel

Reinforcement shall conform to Specification Item No. 406S, "Reinforcing Steel" or Specification Item No. 407S, "Fibrous Concrete".

437S.4 Construction Methods

A. Paver Grate Frames

The paver grate frames shall be designed according to current American Institute of Steel Construction criteria and shall be capable of supporting 90 lbs per sq. ft. (4.31 kPa) of dead load and 110 lbs. per sq. ft. (5.27 kPa) of live load.

The paver grate frame shall be fabricated in conformance with Item 721, "Steel Structures" and Item 723, "Structural Welding" to the dimensions shown in Standard 437S-1. The completed frames shall be installed as shown in Standard 437S-1. The frames shall be securely bolted to the supporting concrete surround using 3/8-inch (9.5 mm) diameter expansion bolt anchors, or approved equivalent.

B. Tree Grates and Frames

The paver grate frame shall be fabricated in conformance with Item 721, "Steel Structures" and Item 723, "Structural Welding" to the dimensions shown in Standard 437S-2, sheet 2.

The cast-iron tree grates shall be fabricated to the dimensions shown in Standard 437S-2, sheets 1 and 3,

The completed tree grate/frame shall be installed as shown in Standard 437S-2.

437S.5 Measurement

Accepted work performed as prescribed by this item will be paid per each paver grate and/or tree grate. Each grate installation shall include a grate frame as detailed in Standards 437S-1, Sheet 1 and 437S-2, sheet 2.

437S.6 Payment

The work performed as prescribed by this item will be paid for "per each" for paver frame/grate, tree grate with frame or tree grate with lighting openings with frame.

The work performed for Tree Wells as prescribed by Item 432S will be paid for "per each" under Pay Item 432S-SAC-7A, 432S-SAC-7B, 432S-SAC-7C, 432S-SAC-7D, 432S-SAC-7E, and 432S-SAC-7F.

This price shall be full compensation for furnishings, fabricating, transporting, erecting and installing each tree grate and grate frame, complete in place, including all material, labor, tools, equipment, barricading and incidentals necessary to complete the work.

Payment will be made under:

Pay Item No. 437S-A:	Paver frame and grate	Per Each.
Pay Item No. 437S-B:	Tree grate and frame	Per Each.
Pay Item No. 437S-C:	Tree grate, lighting option with frame	Per Each.

End

<i>SPECIFIC</i> CROSS REFERENCE MATERIALS
Standard Specification Item Number 437S, "Paver Grate Frames/Tree Grates and Frames"

American Society for Testing And Materials, ASTM

Designation	Description
A 48	Specification for Gray Iron Castings

American Association of State Highway and Transportation Officials (AASHTO)

Designation	Description
M306	Drainage Structure Castings

City of Austin Standard Specifications

Designation	Description
Item No. 406S	Reinforcing Steel
Item No. 407S	Fibrous Concrete
Item No. 721	Steel Structures
Item No. 723	Structural Welding"

City of Austin Standard Details

Designation	Description
Item No. 437S-1	1.8 m (6') Paver Grate Frame
Item No. 437S-2	1.8 m (6') Cast Iron Tree Grate and Frame

<i>RELATED</i> CROSS REFERENCE MATERIALS
Standard Specification Item Number 437S, "Paver Grate Frames/Tree Grates and Frames"

City of Austin Standard Specifications

Designation	Description
Item No 403S	Concrete for Structures
Item No. 480S	Concrete Paving Units

City of Austin Standard Details

Designation	Description
No. 432S-7A	New Trees Planted Within Sidewalk 3.6m (12') or Greater-Clay Soils
No. 432S-7B	New Trees Planted Within Sidewalk 3.6m (12') or Greater-Granular Soils
No. 432S-7C	Tree Well for New Trees Planted Within Concrete Sidewalk 3.6m (12') or Greater
No. 432S-7D	Above Grade Tree Planter

No. 432S-7E	Tree Well with Seat
No. 432S-7F	Tree Well without Grate