



Designation: D 390 – 92 (Reapproved 1999)

## Standard Specification for Coal-Tar Creosote for the Preservative Treatment of Piles, Poles, and Timbers for Marine, Land, and Freshwater Use<sup>1</sup>

This standard is issued under the fixed designation D 390; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

### 1. Scope

1.1 This specification covers new coal-tar creosote, and creosote in use, for the preservative treatment of piles, poles, and timber for marine, land, and fresh water use. Test Methods D 38 covers the sampling of wood preservatives prior to testing.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- D 38 Test Methods for Sampling Wood Preservatives Prior to Testing<sup>2</sup>
- D 95 Test Method for Water in Petroleum Products and Bituminous Materials by Distillation<sup>3</sup>
- D 246 Test Method for Distillation of Creosote and Creosote-Coal Tar Solutions<sup>2</sup>
- D 347 Tables for Volume and Specific Gravity Correction for Creosote, Creosote-Coal Tar Solution and Coal Tar<sup>2</sup>
- D 367 Test Method for Xylene-Insoluble Matter in Creosote<sup>2</sup>
- D 368 Test Method for Specific Gravity of Creosote and Oil-Type Preservatives<sup>2</sup>
- D 369 Test Method for Specific Gravity of Creosote Fractions and Residue<sup>2</sup>

### 3. Requirements

3.1 New creosote and creosote in use in treating operations shall be a distillate derived entirely from tar produced by the carbonization of bituminous coal and shall conform to the detailed requirements shown in Tables 1 and 2.

### 4. Sampling and Test Methods

4.1 The sampling and requirements enumerated in this specification shall be determined in accordance with the following methods:

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D-7 on Wood and is the direct responsibility of Subcommittee D07.06 on Treatments for Wood Products.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.10.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 05.01.

TABLE 1 Requirements for Creosote

	New Creosote		Creosote in Use <sup>A</sup>	
	Min	Max	Min	Max
Water, %	...	1.5	...	3.0
Xylene-insoluble matter, %	...	0.5	...	1.5
Specific gravity, 38.0/15.5°C (100/60°F)				
Whole creosote	1.050	...	1.050	...
Fraction 235 to 315°C (455 to 599°F)	1.027	...	1.027	...
Fraction 315 to 355°C (599 to 771°F)	1.095	...	1.095	...
Distillation, based on water-free creosote:				
Up to 210°C (410°F)	...	2.0	...	2.0
Up to 235°C (455°F)	...	12.0	...	12.0
Up to 270°C (518°F)	10.0	35.0	10.0	35.0
Up to 315°C (599°F)	40.0	65.0	40.0	65.0
Up to 355°C (771°F)	60.0	77.0	60.0	77.0

<sup>A</sup> During treating operations new creosote may increase in water and insoluble in xylene to the allowable maxima shown.

- 4.1.1 *Sampling*—See Test Methods D 38.
- 4.1.2 *Water*—See Test Method D 95.
- 4.1.3 *Xylene-Insoluble Matter*—See Test Method D 367.
- 4.1.4 *Specific Gravity*—See Test Method D 368.
- 4.1.5 *Distillation*—See Test Method D 246.
- 4.1.6 *Specific Gravity of Fractions*—See Test Method D 369.
- 4.1.7 *Volume and Specific Gravity Correction*—See Test Method D 347.

TABLE 2 Requirements for Creosote (Marine Coastal Waters)

	New Creosote		Creosote in Use <sup>A</sup>	
	Min	Max	Min	Max
Water, volume %	...	1.5	...	3.0
Xylene-insoluble matter, weight %	...	0.5	...	1.5
Specific gravity, 38.0/15.5°C (100/60°F):				
Whole creosote	1.080	...	1.080	...
Fraction 235 to 315°C (455 to 599°F)	1.030	...	1.030	...
Fraction 315 to 355°C (599 to 771°F)	1.110	...	1.110	...
Residue above 355°C	1.160	...	1.160	...
Distillation, based on water-free creosote, weight %:				
Up to 210°C (410°F)	...	2.0	...	2.0
Up to 235°C (455°F)	...	12.0	...	12.0
Up to 270°C (518°F)	20.0	40.0	20.0	40.0
Up to 315°C (599°F)	45.0	65.0	45.0	65.0
Up to 355°C (771°F)	65.0	75.0	65.0	75.0