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[1]

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 (ε) 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[2]

D 95 Test Method for Water in Petroleum Products and Bituminous Materials by Distillation[3]

D 246 Test Method for Distillation of Creosote and Creosote-Coal Tar Solutions[2]

D 347 Tables for Volume and Specific Gravity Correction for Creosote, Creosote-Coal Tar Solution and Coal Tar[2]

D 367 Test Method for Xylene-Insoluble Matter in Creosote[2]

D 368 Test Method for Specific Gravity of Creosote and Oil-Type Preservatives[2]

D 369 Test Method for Specific Gravity of Creosote Fractions and Residue[2]

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 confirm 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:

TABLE 1 Requirements for Creosote

	New Creosote		Creosote in Use[A]	
	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

[A] 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[A]	
	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

[1] 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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[2] *Annual Book of ASTM Standards*, Vol 04.10.

[3] *Annual Book of ASTM Standards*, Vol 05.01.

5. Keywords

5.1 coal-tar; creosote; freshwater; marine; piles; poles; preservatives