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PLASTEC NOTE N30

**SPECIFICATIONS AND OTHER STANDARDIZATION DOCUMENTS
INVOLVING CELLULAR PLASTICS (PLASTIC FOAMS),
CUSHIONING AND RELATED MATERIALS**



JULY 1976

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20. ABSTRACT (Continued)

Laboratories (UL) Standards, National Fire Protection Association (NFPA) Standards, and National Bureau of Standards Voluntary Product Standards and Simplified Practice Recommendations. A subject index is provided.

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AND RELATED MATERIALS

by

ARTHUR H. LANDROCK

JULY 1976

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DISCLAIMER

In this compilation PLASTEC has attempted to list all standardization documents known to be relevant to cellular plastics and related materials. It is recognized, however, that there must necessarily be some omissions, and for this the author apologizes.

ABSTRACT

This is a compilation of all known U.S. specifications and other standardization documents involving cellular plastics (plastic foams), cushioning materials, and related materials, including cellular rubbers. A total of 286 documents covered include ASTM Specifications and Standards, Military Specifications, Standards and Handbooks, Federal Specifications, Federal Test Method Standards, Society of Automotive Engineers (SAE) Aerospace Materials Specifications (AMS's) and SAE Recommended Practices, Underwriters Laboratories (UL) Standards, National Fire Protection Association (NFPA) Standards, and National Bureau of Standards Voluntary Product Standards and Simplified Practice Recommendations. A subject index is provided.

SCOPE AND NOTES

This Note is intended as a compilation of all known United States specifications and other standardization documents involving cellular plastics (plastic foams), cushioning materials, and related materials, including cellular rubbers. Documents covered include ASTM Specifications and Standards, Military Specifications, Military Standards, Military Handbooks, Federal Specifications, Federal Test Method Standards, Society of Automotive Engineers Aerospace Materials Specifications and SAE Recommended Practices, Underwriters Laboratories Standards, National Fire Protection Association Standards and National Bureau of Standards Voluntary Product Standards and Simplified Practice Recommendations.

A total of 286 documents are listed. In the case of the ASTM specifications and standards, documents selected for listing include 1. standards known to be specific to cellular plastics and related materials and 2. standards not specific to cellular plastics, but which have been listed because they may be used for cellular plastics and similar materials. The other sources list only documents specific to cellular plastics or rubbers and closely related materials. A subject index is included to assist the reader in finding relevant specifications, standards, and other documents.

In the case of ASTM documents the Parts (volumes) in which the standards are published are listed with the entries. Military documents include Federal Supply Classification (FSC) listings or DoD Area Assignments, designations of the preparing activity, issue date of the latest revision, indication of coordination status, and of the existence of a Qualified Products List (QPL). Federal documents have similar listings, but none of those listed have QPL's nor limited coordination, and so there are no coded listings tabulated. In the case of Federal Test Method Standards, with one exception, the individual test methods are listed separately, with titles and dates of issue.

The reader who is unfamiliar with specifications and standards will find it helpful to refer to Chapter 11, "Commercial and Government Specifications and Standards," by Arthur H. Landrock and Norman E. Beach, PLASTEC, in the Handbook of Plastics and Elastomers, edited by Charles A. Harper, and published by McGraw-Hill Book Company in 1975.

The author welcomes comments on the usefulness of this Note. Suggestions as to documents that are applicable and should be added to any possible future revision would be very much appreciated.



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COMMERCIAL AND INDUSTRY SPECIFICATIONS AND STANDARDS

<u>Ref. No.</u>	<u>ASTM Specifications and Standards</u> (140 specs & stds)	
1	ASTM C 165-54 (1970)	Part 18 ¹ Standard Method of Test for COMPRESSIVE STRENGTH OF PREFORMED BLOCK-TYPE THERMAL INSULATION
2	ASTM C 168-67	Part 18 Standard Definitions of Terms Relating to THERMAL INSULATING MATERIALS
3	ASTM C 177-71	Parts 18, 35 Standard Method of Test for THERMAL CONDUCTIVITY OF MATERIALS BY MEANS OF THE GUARDED HOT PLATE
4	ASTM C 203-58 (1972)	Part 18 Standard Method of Test for BREAKING LOAD AND CALCULATED FLEXURAL STRENGTH OF PREFORMED BLOCK-TYPE THERMAL INSULATION
5	ASTM C 271-61 (1970)	Part 25 Standard Method of Test for DENSITY OF CORE MATERIALS FOR STRUCTURAL SANDWICH CONSTRUCTIONS
6	ASTM C 272-53 (1970)	Part 25 Standard Method of Test for WATER ABSORPTION OF CORE MATERIALS FOR STRUCTURAL SANDWICH CONSTRUCTIONS
7	ASTM C 273-61 (1970)	Part 25 Standard Method of SHEAR TEST IN FLATWISE PLANE OF FLAT SANDWICH CONSTRUCTIONS OR SANDWICH CORES
8	ASTM C 274-68 (1975)	Part 25 Standard Definitions of Terms Relating to STRUCTURAL SANDWICH CONSTRUCTIONS
9	ASTM C 297-61 (1970)	Part 25 Standard Method of TENSION TEST OF FLAT SANDWICH CONSTRUCTIONS IN FLATWISE PLANE
10	ASTM C 303-56 (1972)	Part 18 Standard Method of Test for DENSITY OF PREFORMED BLOCK-TYPE THERMAL INSULATION
11	ASTM C 335-75	Part 18 Standard Method of Test for THERMAL CONDUCTIVITY OF PIPE INSULATION

¹Part numbers listed refer to the current Annual Book of ASTM Standards.
"Parts" are volumes. In 1975 there were 48 Parts.

<u>Ref. No.</u>	<u>ASTM Specifications and Standards</u>	
12	ASTM C 351-61 (1973)	Part 18 Standard Method of Test for MEAN SPECIFIC HEAT OF THERMAL INSULATION
13	ASTM C 355-64 (1973)	Part 18 Standard Method of Test for WATER VAPOR TRANSMISSION OF THICK MATERIALS
14	ASTM C 356-60 (1975)	Part 18 Standard Method of Test for LINEAR SHRINKAGE OF PREFORMED HIGH-TEMPERATURE THERMAL INSULATION SUBJECTED TO SOAKING HEAT
15	ASTM C 364-61 (1970)	Part 25 Standard Method of Test for EDGEWISE COMPRESSION OF FLAT SANDWICH CONSTRUCTIONS
16	ASTM C 365-57 (1970)	Part 25 Standard Methods of Test for FLATWISE COMPRESSIVE STRENGTH OF SANDWICH CORES
17	ASTM C 366-57 (1970)	Part 25 Standard Methods for MEASUREMENT OF THICKNESS OF SANDWICH CORES
18	ASTM C 367-57 (1972)	Part 18 Standard Methods of Test for STRENGTH PROPERTIES OF PREFABRICATED ARCHITECTURAL ACOUSTICAL MATERIALS
19	ASTM C 384-58 (1972)	Part 18 Standard Method of Test for IMPEDANCE AND ABSORPTION OF ACOUSTICAL MATERIALS BY THE TUBE METHOD
20	ASTM C 393-62 (1970)	Part 25 Standard Method of FLEXURE TEST OF FLAT SANDWICH CONSTRUCTIONS
21	ASTM C 394-62 (1970)	Part 25 Standard Method of Test for SHEAR FATIGUE OF SANDWICH CORE MATERIALS
22	ASTM C 411-61 (1967)	Part 18 Standard Method of Test for HOT-SURFACE PERFORMANCE OF HIGH-TEMPERATURE THERMAL INSULATION
23	ASTM C 421-71	Part 18 Standard Method of Test for MECHANICAL STABILITY OF PREFORMED THERMAL INSULATION BY TUMBLING

<u>Ref. No.</u>	<u>ASTM Specifications and Standards</u>
24	ASTM C 423-66 (1972) Part 18 Standard Method of Test on SOUND ABSORPTION OF ACOUSTICAL MATERIALS IN REVERBERATION ROOMS
25	ASTM C 446-64 (1972) Part 18 Standard Method of Test for BREAKING LOAD AND CALCULATED MODULUS OF RUPTURE OF PREFORMED INSULATION OF PIPES
26	ASTM C 447-71 Part 18 Standard Method for ESTIMATING MAXIMUM USE TEMPERATURE OF PREFORMED THERMAL INSULATION
27	ASTM C 480-62 (1970) Part 25 Standard Method of Test for FLEXURE-CREEP OF SANDWICH CONSTRUCTION
28	ASTM C 481-62 (1970) Part 25 Standard Method of Test for LABORATORY AGING OF SANDWICH CONSTRUCTIONS
29	ASTM C 509-70 Parts 18, 38 Standard Specification for CELLULAR ELASTOMERIC PREFORMED GASKET AND SEALING MATERIALS
30	ASTM C 518-70 Parts 18, 44 Standard Method of Test for THERMAL CONDUCTIVITY OF MATERIALS BY MEANS OF THE HEAT FLOW METER
31	ASTM C 522-73 Part 18 Standard Method of Test for AIRFLOW RESISTANCE OF ACOUSTICAL MATERIALS
32	ASTM C 534-70 Part 18 Standard Specification for PREFORMED FLEXIBLE ELASTOMERIC CELLULAR THERMAL INSULATION IN SHEET AND TUBULAR FORM
33	ASTM C 548-71 Part 18 Standard Method of Test for DIMENSIONAL STABILITY OF LOW-TEMPERATURE THERMAL BLOCK AND PIPE INSULATION
34	ASTM C 569-68 (1975) Part 18 Standard Method of Test for INDENTATION HARDNESS OF PREFORMED THERMAL INSULATION
35	ASTM C 578-69 Part 18 Standard Specification for PREFORMED, BLOCK-TYPE CELLULAR POLYSTYRENE THERMAL INSULATION

<u>Ref. No.</u>	<u>ASTM Specifications and Standards</u>	
36	ASTM C 589-68	Part 18 Standard Method of Test for APPARENT IMPACT STRENGTH OF PREFORMED BLOCK-TYPE INSULATING MATERIALS
37	ASTM C 591-69	Part 18 Standard Specification for RIGID PREFORMED CELLULAR URETHANE THERMAL INSULATION
38	ASTM D 149-75	Parts 35, 38, 39 Standard Methods of Test for DIELECTRIC BREAKDOWN VOLTAGE AND DIELECTRIC STRENGTH OF ELECTRICAL INSULATING MATERIALS AT COMMERCIAL POWER FREQUENCIES
39	ASTM D 150-74	Parts 35, 38, 39, 40 Standard Methods of Test for A-C LOSS CHARACTERISTICS AND DIELECTRIC CONSTANT (PERMITTIVITY) OF SOLID ELECTRICAL INSULATING MATERIALS
40	ASTM D 256-73	Part 35 Standard Methods of Test for IMPACT RESISTANCE OF PLASTICS AND ELECTRICAL INSULATING MATERIALS
41	ASTM D 257-75a	Parts 35, 38, 39 Standard Methods of Test for D-C RESISTANCE OR CONDUCTANCE OF INSULATING MATERIALS
42	ASTM D 395-69	Part 37 Standard Methods of Test for COMPRESSION SET OF VULCANIZED RUBBER
43	ASTM D 412-68	Parts 35, 37 Standard Method of TENSION TESTING OF VULCANIZED RUBBER
44	ASTM D 454-53 (1970)	Part 37 Standard Method of AIR-PRESSURE HEAT TEST OF VULCANIZED RUBBER
45	ASTM D 471-75	Part 37 Standard Method of Test for CHANGE IN PROPERTIES OF ELASTOMERIC VULCANIZATES RESULTING FROM IMMERSION IN LIQUIDS
46	ASTM D 531-56 (1970)	Part 37 Standard Method of Test for INDENTATION OF RUBBER BY MEANS OF THE PUSEY & JONES PLASTOMETER
47	ASTM D 543-67 (1972)	Part 35 Standard Method of Test for RESISTANCE OF PLASTICS TO CHEMICAL REAGENTS