

Chardon
Rubber
Company

Industrial Rubber Goods Division

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TO: Chardon Rubber
FROM: Mike Wieger
DATE: May 14, 1990
SUBJ: Material certification and S.P.C. data that is sent
with each lot of material

As of June 11, 1990 additional information for material certification will be required. The material certification sheets will still require the I.R.G. part number, date, lot number, quantity of material shipped (per lot number), the specifications the material is being certified to, and the signature of the person responsible for test results. After June 11, I.R.G. will also require a listing of what chemical properties are covered in the material specifications, what data is required in the specifications, and what data is obtained in the testing. (An example of this format accompanies this letter, but if the supplier would like to use a different format, submit a sample for approval). The new requirements should not be any more difficult than before, since these are the same tests that the suppliers have been certifying to.

The statistical data received with each lot will remain the same. I.R.G. requires statistical data from suppliers for all dimensions called out in the I.R.G. inspection instructions. I.R.G. also requires the lot number on the chart to signify the area of the chart representing the lot and corrective action on the chart for any point out of control. In the near future, I.R.G. will require X & R charts exclusively, if the suppliers are presently using histograms, please send me a timetable of when you will implement X & R charts.

If there are any questions about this information, do not hesitate to call.

Mike Wieger
Supply Quality Technician

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How do you
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CHARDO 01166

CHRYSLER CORPORATION MATERIAL STANDARD

CHANGE -
ASL Req'd.PLASTICS - ELASTOMERS - MECHANICAL - GENERAL PURPOSEA - SCOPE

This standard covers grades of vinyl compounds suitable for covers or boots for bulb socket wires, grommets for electrical wiring, etc. Parts may be made either by injection molding or extruding. Variations in grade or color shall be designated by a Chrysler Plastic Number (CPN). Compounds covered by this standard are subdivided according to their Shore "A" Durometer Hardness. (See Table on Page 3).

B - GENERAL REQUIREMENTS

- 1 - All plastic materials shall be specified on the part drawing by a Material Standard and a Chrysler Plastic Number (CPN). All materials considered for Chrysler Corporation usage shall be directed to the Rubber and Plastics Laboratory at the earliest possible date so that an orderly program of source approval can be concluded in advance of requirements. Current approved materials which are color keyed and series oriented shall first receive Styling color approval before being submitted to the Rubber and Plastics Laboratory for "pigmented material" approval. Material and fabricating source approval shall be secured before material or parts can be supplied to any Chrysler manufacturing or assembly plants.
- 2 - To qualify for approval each vendor (either material supplier or fabricator) shall have and maintain adequate technical personnel responsible for an appropriate program of production quality control that are pertinent to the vendor's processing procedures and equipment. Records shall be maintained which describe the reliability and uniformity of the processes involved. These records and quality control procedures shall be made available upon request to the Rubber and Plastics Laboratory.
- 3 - All approved sources shall have adequate manufacturing and testing equipment for their processes and specific formulation of the plastic described in this standard. The judgment of the adequacy of the equipment shall be the responsibility of the Rubber and Plastics Laboratory.
- 4 - Only virgin materials are to be used (unless specifically stated otherwise) by the fabricating sources. Reground sprues, runners, and parts may be used to a percentage not exceeding ten per cent; this addition is to be made only from regrind generated in the fabricators plant and from the same molding run. Off-color or reprocessed materials shall not be used.

(Continued)

* Denotes area of change from previous issue.

DATE	EFF. CODE	P.C.R. NO.	CHANGE	RELEASES - CHANGES AND CANCELLATIONS
3-9-70				Date Issued (Dept. 5210)

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NOTE: The above standards and/or specifications are for use in supplying orders of Chrysler Corporation or its subsidiaries. Suppliers should determine the currency of their copies prior to use. The risk of compliance with the current standards and/or specifications is on the supplier. Distribution hereof to others, whether paid or free, is for information only.

Copies are available from the Engineering Standards and Data Department, Engineering Office.

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CHRYSLER CORPORATION MATERIAL STANDARDB - GENERAL REQUIREMENTS (Continued)

- 5 - Non-conformance to the requirements of this Material Standard whether in entirety or in part when observed or ascertained by qualified Chrysler Corporation personnel shall be considered sufficient grounds for removal of that source from the Chrysler Engineering Approved Source List or to have such corrective action taken as is considered necessary to insure consistent shipment of quality material and parts.
- 6 - It is the responsibility of the material supplier to employ all such manufacturing, quality control and handling procedures as are required to maintain uniform material in shipment to shipment lots of an approved material. Contemplated changes which will affect previously approved materials shall be brought to the attention of the Rubber and Plastics Laboratory at an early date allowing sufficient time for an evaluation program before such a change is made. Approvals shall be obtained prior to supplying any material in accordance to this Material Standard for usage in parts purchased by Chrysler Corporation.

C - FINISHED PART QUALITY REQUIREMENTS

- 1 - Each part shall be uniform in color, texture, finish, electrical and mechanical properties and this uniformity shall be required for all parts supplied to Chrysler. Threaded sections shall have smooth, clean threads that are free from nicks, tears, or other damage. Parts shall be free from warpage, checks, cracks, chipped edges, flow marks and blisters or uneven surfaces. The parts shall be free from flash, ridges, or roughness at the dividing line of the mold. Parts shall be free from porosity and shall have uniform density throughout. All finished parts must have flash and gates smoothly removed and all visible surfaces must be completely free of tool marks, mold lubricants or contamination of any type. It shall be the fabricating vendor's responsibility to employ all necessary procedures in material handling and processing required to furnish parts to meet the requirements of this standard.
- 2 - In order to prevent paint cratering or distortion on parts and bodies painted at Chrysler production plants, it shall be mandatory that no surface contamination of silicone or "silicone-like" mold lubricants or parting agents be present on supplied parts conforming to this standard. Chrysler Engineering Office Laboratory Procedure 463PB-13-01 shall be the test procedure used in determining conformance to this requirement.

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CHRYSLER CORPORATION MATERIAL STANDARDD - DETAILED REQUIREMENTS

Detailed test requirements are divided into 2 parts:

Part I gives the test requirements of the raw material and includes the tests to which the raw material vendor will certify. It also gives the test requirements for laboratory samples supplied by the material sources used to obtain material approval prior to use by fabricating sources. Since these test specimens are ASTM or equivalently designated, test conditions and physical properties shown in Part I do not necessarily apply to production parts. Part I is, therefore, intended for use mainly in work pertaining to source approval, development, and field correction by the Rubber and Plastics Laboratory and material supplier. Where ASTM test methods are not available, Chrysler Laboratory test Procedures will be used.

Part II defines the test procedures and requirements for injection molded or extruded parts to verify adequate field service.

In all instances, each material supplier is required to present raw materials and injection molded test samples to the Rubber and Plastics Laboratory to verify their ability to pass the tests listed in Part I prior to approval. Each fabricator is required to submit injection molded or extruded parts to the Rubber and Plastics Laboratory to verify conformance to Part II requirements. Failure to comply with these requirements constitutes non-approval. All tests are to be made at $23 \pm 1^\circ\text{C}$ (unless noted otherwise) and conditioned as specified.

<u>Part I</u>	DC225	DC226	DC227	DC228	Test Procedure
1 - Tensile Strength, Ultimate, psi, Min.	1000	1250	1600	2000	ASTM D412 Die "C"
2 - Elongation, Ultimate, Min.	350%	300%	250%	200%	ASTM D412 Die "C"
3 - Volatile Loss (.100" $\pm$.010") Sample Thickness. 72 hrs/175°F	Max. 4%	Max. 4%	Max. 3%	Max. 1.5%	ASTM D756 (Procedure II)
4 - Shore "A" Durometer 15 Sec. dwell	55 $\pm$ 5	65 $\pm$ 5	75 $\pm$ 5	85 $\pm$ 5	ASTM D2240
5 - Cold Test (1" Mandrel)	Flexible at -20°F	Flexible at -20°F	Flexible at -20°F	Flexible at -20°F	Chrysler 463DD-7-01

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CHRYSLER CORPORATION MATERIAL STANDARDD - DETAILED REQUIREMENTS (Continued)

<u>Part I (Continued)</u>		DC225	DC226	DC227	DC228	Test Procedure
6 - Heat Resistance and Max. Loss of Dimensions, 72 hrs/175°F		Finished parts must remain rubberlike, show no tack.				ASTM D756 (Procedure II)
		3.0%	2.5%	2.0%	1.5%	
7 - Tear Resistance, ppi		Min. 150	Min. 175	Min. 200	Min. 225	ASTM D1004
8 - Specific Gravity		As recorded				ASTM D792
<u>Part II</u>						
1 - Shore "A" Durometer, 15 Sec. dwell		(Same as in Part I)				
2 - Heat Resistance and Max. Loss of Dimension 72 hrs/175°F		(Same as in Part I)				
3 - Cold Test		(Same as in Part I)				
4 - Specific Gravity		±5% of recorded value (See Part I)				

E - CONTROL

- 1 - Materials for this standard shall be purchased in compliance with the approved formulation code number as listed in the specified Chrysler Plastic Number (CPN).
- 2 - Parts to be supplied in compliance with this Material Standard shall be purchased only from sources which appear on the Chrysler Engineering Office Approved Source List. This information may be obtained from the Chrysler Corporation Purchasing Department.
- 3 - A material supplier shall not supply material nor a fabricator production parts to this standard until source approval is obtained from the Chrysler Engineering Office Rubber and Plastics Laboratory. After approval the formulation and the method of processing shall not be changed without notification to and approval from the Rubber and Plastics Laboratory.

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CHRYSLER CORPORATION MATERIAL STANDARDE - CONTROL (Continued)

- 4 - The fabricating or processing vendor (prime source) is responsible for the quality of all materials making up the finished part whether they are compounded by him or purchased from a material supplier (secondary source). In instances where plastic parts are supplied as a part of an assembly or sub-assembly, all such plastic parts shall be purchased only from fabricating sources that appear on the Chrysler Engineering Approved Source List for that Material Standard.
- 5 - All material suppliers shall submit to the Rubber and Plastics Laboratory, at least semi-annually, a written laboratory report on the material approved for this Material Standard and the related CPN's. The report shall cover the Detailed Tests listed in Parts I and II.
- 6 - The parts shall be packaged in standard commercial containers which afford sufficient protection against damage during shipment and storage.
- 7 - All shipments of production quantities shall be marked with the part number, quantity and vendor's name and address.
- 8 - Inquiries concerning this standard, including its interpretation, shall be directed to the Rubber and Plastics Laboratory, Chrysler Engineering Office.
- 9 - Inquiries by approved sources concerning Chrysler Plastic Numbers (Abbrev. CPN) shall be directed to the Rubber and Plastics Laboratory, Department 5210, Chrysler Engineering Office.

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