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TY

SPECIFICATIONS

TECHNICAL RUBBER ARTICLES, SHEETS

AND RUBBER STOCK FOR SPECIAL MACHINES

AND ENGINES FOR THEM

TY 005 - 216 - 75

(Instead of TY 38 105 1264 - 72 .

TY 38 105 003 - 73)

23

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		Page No 1 of 79
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(820 K1)

Specifications

Technical rubber articles, sheets and rubber stock for special machines and engines for them.

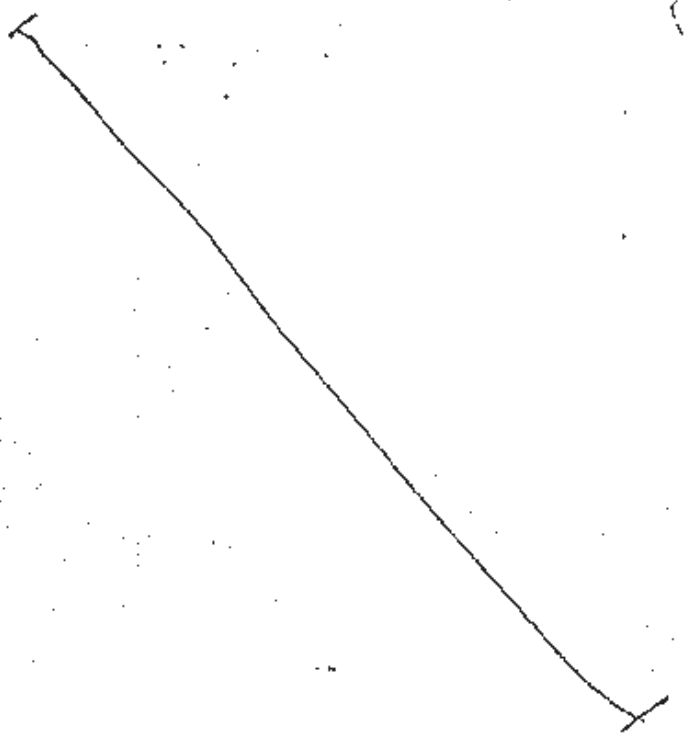
TY 005 216 - 75

Instead of the specifications 38 105 1264 - 72 and TY 38 105 003 - 73.

Introduced for the duration :

01.01.76 to 01.01.91.

These present specifications are applicable for rubber technical articles, from here on wards reffered as PT (A, И) (Rubber, rubber armoured, rubber porous cloth) intended for making up a set of special machines and engines for them, sheets and rubber stock for manufacturing the specified PT (A, И).



1. TECHNICAL REQUIREMENTS

1.1. PT ДИ and sheets should be in compliance with the requirements of present specifications and drawings of customer's plant ; upon agreement with manufacturing plant and should be manufactured as per technological regulations approved in an established order.

1.2. In the drawing on PT ДИ the following should be specified :

Grade of material from which PT ДИ should be manufactured;

Number of the present specifications ;

Surfaces for which higher requirements are given (surface P) ;

Place and content of marking. (if required);

List of tests of PT ДИ (if required).

1.3. Fittings for rubber metallic PT ДИ should be in compliance with the drawings and technical requirements (appendix I).

1.4. Limit deviations of dimensions of PT ДИ should be in compliance with the requirements 1-15.

Note: Upon agreement between the supplier and customer, limit deviations of dimensions previously agreed is allowed for the series machines and spare parts, manufactured earlier.

1.4.1. Limit deviations of dimensions of packing rings are specified in Table 1.

Table 1

MM

Diameter				Section (width, height)				
Nominal			Limit deviations	Nominal			Accuracy class Limit deviations	
							I	□
	upto	5	± 0.1		Upto	2.5	± 0.1	± 0.2 − 0.1
Above	5	" 10	± 0.2	Above	2.5	" 5	+ 0.2 − 0.1	+ 0.3 − 0.1
"	10	" 20	± 0.3	"	5	" 10	± 0.2	+ 0.3 − 0.2
"	20	" 40	± 0.4	"	10	" 20	± 0.4	+ 0.6 − 0.4
"	40	" 60	± 0.6					
"	60	" 100	± 0.8	"	20	" 50	± 0.6	± 1.0 − 0.6
"	100	" 140	± 1.0					
"	140	" 180	± 1.2	"	50		± 1.2 %	±1.5%
"	180	" 210	± 1.5					
"	210	" 250	± 2.0					
"	250		± 1.0 %					

NOTE: Upon agreement between the supplier and customer checking of positive and negative tolerances are allowed provided keeping of field of tolerances and deformation charactristics specified by the present specifications. Packing ring for movable joints is suggested to manufacture as per 1st accuracy class.

Packing rings of the round section with dimensions as per GOST 9833-73 are made without drawing the drawings with conventional designation as per the following structure :

$$\frac{XXX - XXX - XX - X \quad GOST\ 9833 - 73}{XXXX \quad TY\ 005\ 216 - 75}$$

Where :

XXX	–	Diameter of rod in mm ;
– XXX	–	Diameter of the cylinder in mm ;
– XX	–	Diameter of the section in mm multiplied by 10 ;
– X	–	Accuracy group
XXXX	–	Grade of rubber.

1.4.2. Limit deviations of dimensions of rubber sealing ring and collars are specified in Table 2.

Table 2

MM

Diameter				Section (~~diameter~~, width and height)			
Nominal			Limit deviation	Nominal			Width
	Upto	15	± 0.2		Upto	5	± 0.2
Above 15	"	25	± 0.3	Above 5	"	10	± 0.3
" 25	"	50	± 0.4	" 10	"	20	± 0.5
" 50	"	100	± 0.6	" 20	"	50	± 1.0
" 100	"	150	± 0.8	" 50			± 2.0 %
" 150	"	220	± 1.0				
" 220	"	300	± 1.2				
" 300			± 0.6 %				

Note: Upon agreement between supplier and customer checking of positive limit deviations provided keeping of field of limit deviations and deformed characteristics of PTД(И), specified in present specifications is allowed.

1.4.3. Limit deviations of dimensions of rubber-metallic packing ring should be in compliance with GOST 8752-79.

1.4.4. Limit deviation of dimension of rubber fabric packing is specified in Table 3.

Table 3

MM

Diameter		Section			
		Width		Height	
Nominal	Limit deviations	Nominal	Limit deviations	Nominal	Limit deviations
upto 30	± 0.5	upto 6	± 0.25	upto 6	± 0.5
Above 30 " 60	± 0.6	Above 6 " 15	+ 0.4	Above 6 " 10	+ 0.8
" 60 " 220	± 0.8		- 0.3		- 0.5
" 220 " 700	± 1.0	" 15 " 20	+ 0.7	" 10 " 15	+ 1.5
			- 0.5		- 0.5
" 700 " 1500	± 1.5	" 20 " 30	+ 1.0	" 15 " 30	+ 2.0
			- 0.7		- 0.5
" 1500	± 2.0	" 30	+ 5.0%	" 30	+ 7.0%
			- 3.0%		- 3.0%

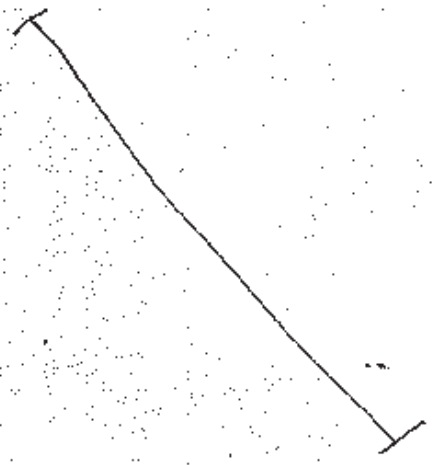
1.4.5. Limit deviations of dimensions of protective cases is specified in Table 4.

Table 4

MM

Over all dimensions				Thickness of Wall	
Diameter		Height		Nominal	Limit deviations
Nominal	Limit deviations	Nominal	Limit deviations		
Upto 10	±0.3	Upto 10	±0.3	Upto 2.5	±0.2
Above 10 " 25	±0.5	Above 10 " 25	±0.5	Above 2.5 "5.0	±0.3
" 25 " 50	±0.8	" 25 " 50	±0.8	" 5.0	±0.5
" 50 " 100	±1.0	" 50 "100	±1.0		
" 100 " 150	±1.5	" 100	±1.0%		
" 150 " 200	±2.0				
" 200 " 250	±2.5				
" 250 "	±1.2%				

1.4.6. Limit deviations of dimensions of gaskets and plug are specified in Table 5.



MM

Table 5

Overall dimensions (length & width)				Cross section (width and height)			
Nominal			Limit deviations	Nominal			Limit deviations
Upto До		5	±0,2	Upto До		2,5	±0,2
Above Св.	5	" 10	±0,3	Above Св.	2,5	" 5	±0,3
"	10	" 25	±0,5	"	5,0	" 10	±0,5
"	25	" 50	±0,8	"	10	" 25	±0,7
"	50	" 100	±1,0	"	25	" 50	±1,0
"	100	" 150	±1,5	"	50	" 100	±1,5
"	150	" 200	±2,0				
"	200	" 250	±2,5	"	100	" 150	±2,0
"	250		±1,2%	"	150		±1,5%

1.4.7. Limit deviations of dimension of membrane and diaphragm are specified in Table 6.

Table 6

MM

Over all dimensions						Thickness			
Diameter			Limit deviation	Height		Limit deviation	Diameter		Limit deviation
Nominal				Nominal			Nominal		
Upto до		10	±0,2	Upto до	10	±0,3	Upto до	2,5	±0,2
Above Св.	10	" 25	±0,3	Above Св.	10	" 25	±0,5	Above Св. 2,5 " 5,0	±0,3
"	25	" 50	±0,5	"	25	" 50	±0,7	" 5,0	±0,5
"	50	" 100	±1,0	"	50	" 100	±1,0		
"	100	" 150	±1,5	"	100		±1,0%		
"	150	" 200	±2.0						
"	200	" 250	± 2.5						
"	250		±1.2%						

1.4.8. Limit deviations of dimensions of rubber metallic and rubber shock absorbers are established upon agreement between the supplier and the customer and specified and drawings.

1.4.9. Limit deviations of dimensions of vibro insulating supports are specified in Table 7."

Table 7

MM

Over all dimensions				Section (height, thickness)			
Nominal			Limit deviations	Nominal			Limit deviations
Above	up to	До 5	±0,3	Above	up to Св.2,5 до 4		±0,4
Св.5	"	I0	±0,5	"	4 "	6	±0,5
" I0	"	20	±0,6	"	6 "	I0	±0,6
" 20	"	40	±0,8	"	I0 "	20	±0,8
" 40	"	60	±I,0	"	20 "	40	±I,3
" 60	"	I00	±I,3	"	40 "	60	±I,6
" I00	"	I50	±I,5	"	60 "	I00	±2,0
" I50	"	250	±2,0	"	I00 "	I50	±2,5
" 250			±I,5%	"	I50		±2,0%

Note for table 3, 4, 5, 6 and 7 :

Upon agreement between supplier and customer, checking of positive and negative limit deviations provided keeping of limit deviations and deformed characteristics of PT specified in the specifications is allowed.

1.4.10. Limit deviations on the thickness of plates without fabric gaskets and articles of them are specified in Table 8.

Table 8

MM

Thickness of plate and PTAM		Over all dimensions of PTAM (diameter, length and width)	
Nominal	Limit deviations	Nominal	Limit deviations
2.0	± 0.3	Upto 10	± 0.5
3.4	± 0.4	Above 10	" 25	± 0.8
5.0	± 0.5	" 25	" 50	± 1.0
6.0	± 0.6	" 50	" 100	± 1.5
8.0	± 0.8	" 100	" 150	± 2.0
10.0	± 1.0	" 150	" 250	± 3.0
12.0	± 1.1	" 250		± 1.2 %
14.0	± 1.2			
16.0	± 1.3			
18.0	± 1.4			
20.0	± 1.5			
25.0	± 1.8			
30.0	± 2.0			
35.0	± 2.2			
40.0; 45.0	± 2.5			
50.0; 55.0; 60.0	± 3.0			

NOTE: When cutting PTДИ from plate, taper and shrinkage cavity of edges within the limit deviations of dimensions are allowed.

1.4.10.1. Plates should be delivered with width from 250 to 800 mm. with length from 250 to 1000 mm. Limit deviations on width and length for all dimensions should be ± 15 mm.

1.4.10.2. Difference in thickness of each plate should not exceed half of the fields of limit deviations, sheets of rubber in the base СК ф - field of the limit deviations.

1.4.11. Limit deviations on thickness of plate with fabric gaskets and articles of them are specified in Table 9.

Table 9

MM

Thickness of plates and PTDИ				Overall dimensions of PTA (diameter, length and width)			
Nominal			Limit deviations	Nominal			Limit deviations
	Upto	3	± 0.4		upto	10	± 0.8
Above 3	upto	5	± 0.6	Above 10	upto	25	± 1.0
" 5	"	10	± 1.0	" 25	"	50	± 1.5
" 10	"	15	± 1.2	" 50	"	100	± 2.0
" 15	"	20	± 1.5	" 100	"	150	± 3.0
" 20	"	30	± 2.0	" 150	"	250	± 3.5
" 30			± 3.0	" 250			± 1.5%

NOTE: When cutting PTДИ from plate, taper and shrinkage cavities of edges with on the limit deviations of dimensions are allowed.

1.4.11.1. Plates are should be delivered with width from 250 to 800 mm. with length from 250 to 1000 mm. Limit deviations for the width and length for all dimensions ± 15 mm.

1.4.11.2. Difference in thickness of sheets should not exceed half of the field of limit deviation.

1.4.12. Limit deviations of dimensions of porous sheets, article of them and porous of РТДИ are specified in Table 10.

Table 10

MM

Spongy sheets and article of them				Spongy components.	
Thickness of plate and РТДИ		Over all dimensions of РТДИ (diameter, length and width)		Nominal	Limit deviations
Nominal	Limit deviations	Nominal	Limit deviations.		
3	+1,0 -0,5	Свыше upto Св.3 до 50	±1,0	upto до 3	±0,5
4-7	±1,0	" 50 " 100	±2,0	Above. Св.3 " 20	±1,0
8, 10, 12, 14	±1,5 -1,0	" 100 " 200	±3,0	" 20 " 100	±2,0
16, 18, 20, 22, 25, 28, 30	±1,5	" 200 " 400	±5,0	" 100 " 500	±3,0
32, 35, 38, 45, 50	±2,0	" 400 " 700	±10,0	" 500	±5,0
55, 60, 65, 70, 75	±2,5	" 700 " 1000	±15,0		
		" 1000	±25,0		

NOTE:

1. When cutting PTA,W from plates taper and cavities of edges with in the limit deviations of dimensions.

2. Measuring of plate thickness should be carried out at a distance from the edge of plate should not exceed 20 mm.

1.4.12.1. Plate with thickness from 3 to 10 mm should be delivered in unglued form, above 10 mm in glued form (from many vulconized plates) and unglued form.

1.4.12.2. Length and width of plates of all thickness from 200 to 500 mm plates of big dimensions may be produced.

1.4.12.3. Difference in thickness of plates should not exceed the area of limit deviation.

1.4.13. Limit deviations of dimensions of bush and inserts for flexible elements of coupling and valves should be fixed upon agreement between supplier and customer.

1.4.14. Limit deviations of dimensions of sections of cords of circular, rectangular and square sections and cords of chemfered sections are specified in Table 11.

Table 11

MM

Nominal dimensions	Limit deviations.
upto 2	± 0.3
Above 2 " 4	± 0.4
" 4 " 6	± 0.6
" 6 " 10	± 0.8
" 10 " 20	± 1.2
" 20 " 30	± 2.0
" 30	± 2.5

1.4.15. Limit tolerances of dimensions of section of frame tape a are specified in Table 12.

Table 12

MM

Thickness of wall		Width, Height	
Nominal	Limit deviations	Nominal	Limit deviations
From 1 upto 1.5	± 0.5 0.3	From 3 upto 5 Above 5 " 8	± 0.6 ± 1.0
Above 1.5 " 2.0	± 0.5	" 8 " 12	± 1.5
" 2.0 " 2.5	± 0.8	" 12	± 2.0
" 2.5	± 0.9		

1.4.16. Limit deviations of dimensions of section of porous profile is specified in Table 13.

Table 13

MM

Nominal deviations	Limit deviations
From 2.5 upto 5	± 0.5
Above 5 " 10	+ 1.0 - 0.5
" 10 " 20	+ 1.5 - 1.0
" 20 " 30	± 2.0
" 30	± 10%

1.4.17. Limit deviations of dimensions of pipes of different profiles and articles of them are specified in Table 14.

Table 14

MM

Inner diameter		Thickness of wall		Cutting pitch (height of the article)	
Nominal	Limit deviations	Nominal	Limit deviations	Nominal	Limit deviations
From upto		From upto	From upto	upto	
От 2 до 3	±0,3	от I,25 до 2,0	от I,25 до 3,0± upto 0,3	до 5	±0,6
Above Св.3 " 6	±0,5		Above Св.3,0 " 4,0± upto 0,4	Above Св.5 " 20	±0,8
" 6 " I0	±0,8	" I,25 " 3,0		" 20 " 50	±I,0
" I0 " I6	±I,0	" I,25 " 3,0		" 50	±I,5
" I6 " 24	±I,5	" 2,0 " 6,0	Св.4,0 до 5,0± 0,5		
" 24 " 40	±I,8	" 2,0 " 8,0			
" 40	±I0%				

NOTE: Pipes with inner diameter above 6 to 10 mm and with thickness of wall upto 1.9 mm; with diameter above 10 to 16 mm and with thickness of wall upto 2.9 mm; with diameter above 16 to 40 mm and thickness of wall upto 3.9 mm ; with diameter above 40 and with thickness of wall upto 4.9 cannot be used for dust splash guard.

1.4.18. Limit deviations of dimensions of rolled sheets and articles of them are specified in Table 15.

Table 15

MM

Nominal thickness	Limit deviations	Quantity of fabric gaskets, per, max.
upto 1.5	± 0.3	-
Above 1.5 " 2.0	± 0.4	-
" 2.0 " 3.0	± 0.5	1
" 3.0 " 6.0	± 0.8	2
" 6.0 " 8.0	± 1.0	3
" 8.0 " 10.0	± 1.3	4
" 10.0 " 15.0	± 1.5	4
" 15.0 " 20.0	± 2.0	4
" 20.0	± 3.0	4

NOTE: When cutting PTДИfrom sheet, taper and cavity of edges with in the limit deviations of dimensions are allowed.

1.4.18.1. The sheets are produced with width from 500 to 1200 mm with limit deviations ± 50 mm and length from 500 to 10000 mm with limit deviations ± 300 mm. Nominal dimensions should comply with the order.

NOTE: Plate with upto 1.5 mm can be produced with length upto 12000 mm.

1.4.18.2. Difference in thickness should not exceed half of the area of limit deviation.

1.4.19. Limit deviations of РТД И , manufactured from rubber in the base of fluorine - containing elastomer is fixed up on agreement between the supplier and customer and specified in the drawings.

1.5. Depending upon the conditions of operations and purpose РТД И and sheet should be manufactured from the grade of rubber , specified in Table 16 and 17.

1.6. Physico mechanical characteristics of standard specimens of rubber should be in compliance with those specified in Table 16 and 17 and guaranteed by the manufacturing plant.

1.7. РТД И and sheets, delivered for the completion of special ma machines to a country of different climatic region should be manufactured based on the requirements of GOST 15152.69.

1.8. Physico-mechanical characteristics of rubber (hardness, durability connected with the metal etc.,), determined directly on РТД И if required, is specified in the drawings with indication of standard of measuring indicator.

1.9. Visual inspection for the quality of РТД И should be carried out in compliance with table 18 and 19. For improving deviation of test specimen visually, agreement for them with the manufacturing plant, consumers plant and customer's representative is allowed.

Surface finish of moulding surface of newly made mould, (determining surface of РТД И) should be not more than P_a = 0.32 mm GOST 2789-73.

Here in after quality of casting surface should be ensured the compliance of РТД,И with the requirements of Table 18 and 19 of present specifications.

1.10. Marking.

1.10.1. Depending upon the method of manufacturing, dimensions and purpose marking of РТД,И should be carried out in the following way:

1.10.2. By imprints of engroving of mould : РТД,И number, name of manufacturing plant or trade mark.

NOTE: 1. Using of available mould until complete wear is allowed.

2. Upon agreement between supplier and customer using in colour marking for the designation of quarter and year of manufacturing of РТД,И is allowed.

1.10.3. For РТД,И on the surface of which it is impossible to apply engraving, and also for porous and extruded РТД,И, number (designation) of РТД,И and manufacturing plant should be specified on the tag.

1.10.4. РТД,И , delivered directly for export to a country with tropical climate should be marked in compliance with GOST 15152-69.

1.10.5. The sheets should be marked with indelible water paint. The marking should specify the manufacturing plant or trade mark, number of present specifications, grade of rubber stock, thickness of sheet in mm, manufacturing date. (year, quarter) and

QID stamp about finess.

NOTE : Moulding sheets may be marked with impression of engraving which specifying the name or trade mark of manufacturing plant, conventional designation, date of production (year, quarter) and for porous sheet the QID stamp marking may be carried out on tag with same wording.

1.11. Packing.

1.11.1. ПТД,И should be delivere to packing, protecting them from damage, impurities, deformation and loss during transportation. Type of container should be in compliance with those in the order.

1.11.2. ПТД,И of one dimension and one name should be packed in one container.

Weight of one packed place should not exceed 50 kg.

If small dimensions at ПТД,И is delivered in small quantity, so many names of ПТД,И may be packed in one container. In this case each name should have its own packing.

1.11.3. ПТД,И, delivered directly to export to a country with tropical climate should have packing in compliance with GOST 15152-69.

1.11.4. The casted sheets should be packed in plywood or wooden boxes (GOST 18573-78, GOST 16501-77, GOST 16536-76 GOST 2991-85 and GOST 15841-77) sheets may be packed by the way of sewing in a strong fabric. Weight of one packing should not exceed 50 kg.

1.11.5. Rolled sheets should be folded up in to a roll and tied up at two-three places. Weight of one packing should not exceed 50 kg.

1.11.6. Each packed place of РТД,И , sheets and rubber stock should have label, in which the following should be specified :

Name of manufacturing plant or trade mark ;

РТД,И number or designation of sheet;

Number of present specifications ;

Grade of rubber stock ;

Batch No.

Number of document for quality (certificate)

Weight or Qty ;

Manufacturing date.

QID stamp for fitness.

Stamp of customer's representative (in case of acceptances by customer's representative.

1.11.7. Each batch of РТД,И , sheets and rubber stock should accompany by document about quality (certificate). Forms of document about quality (certificate) on РТД,И and sheets are given in appendixes.

1.11.8. Form of document about quality (certificate) for trade rubber stock in should be placed by the manufacturing plant and should contain the following:

Name of the manufacturing plant ;

Name of rubber stock ;

Laying number ;

Batch number ;

Net weight ;

Manufacturing date ;

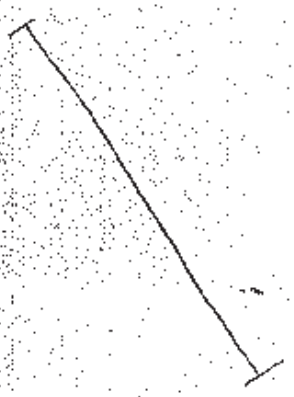
Indications in compliance with specifications;

QID stamp for fitness stamp of customers representative (in case of acceptance of customer's representative. Actual physico - mechanical characteristics of rubber stock).

On the document about quality (certificate) QID stamp and stamp of customer's representative (in case of acceptance of customer's representative. Document about the quality (certificate) should be protected against damage during transportation and enclosed inside the packing.

1.11.9. If delivery of batchs of РТ,Д,И, sheets or rubber stock consist of several boxes, quantity if box/number of box should be specified on tag (lable).

On the label of packing, where the document about the quality (certificate) should be shown by marking that document about the quality is "here".



2. ACCEPTANCE RULES

2.1. Checking of the quality of РТД,И , sheets and rubber stock and the compliance of them the present specification should be carried out by the manufacturing plant.

2.2. РТД,И , sheets and rubber stock should be presented for acceptance by batches of each name separatly.

2.3. Batches of РТД,И is, manufactured from one grade of rubber, one name and dimension and drawn up document about the quality (certificate). Dimension of batch РТД,И depending upon the type of РТ Д,И and should not exceed 5000 pcs.

2.4. Batches of unmoulded articles are considered to be the article manufactured from one grade of rubber, one name and dimension with weight not exceeding 1000 kg, drawin up a document about the quality (certificate).

Batches of plates are considered to be the articles, manufactured from one grade of rubber, with weight not exceeding 1000 kg with completion of batches from some or different thickness of plate, drawn up document about the quality, (certificate) with specifying in it the weight of sheet of each thickness.

2.5. To check the quality, РТД,И, sheets and rubber stock should be subjected to type, periodic and acceptance tests.

2.5.1. Type tests should be carried out before begining, series production. When changing the design, materials on the techno-

logy of manufacture affecting the quality of PTДИ, plates and rubber stocks as per all characteristics of Table 20. When accepting the mould type test should be carried out as per paras 1,2,6 of Table 20.

2.5.2. Periodic test should be carried out at least once in a month for checking the stability of production.

2.5.3. Each batch of PTДИ and sheets and each batch of rubber stock should be subjected to periodic test.

2.6. Characteristics to be checked during tests is given in Table 20.

Table 20

Characteristic	Method and means of checking	Quantity of specimens to be checked.	Type of test: Type test	Periodic test	Acceptance test
(1)	(2)	(3)	(4)	(5)	(6)
1. External appearance of PTДИ, sheets and rubber stock.	Inspection or comparison with test specimen.	Complete check.	X	-	X
2. Dimensions of PTДИ and sheets.	~~Vernier caliper~~				
2.1. Test dimensions.	Vernier Calipes Template, gauge mean mandrel and Other measuring tool.	5% of the batch, but at least 3 pcs.	X	-	X
2.2. Dimensions according to the drawings for complete check.		Complete check			

Continuation of Table 20

(1)	(2)	(3)	(4)	(5)	(6)
2.3. Other dimensions.	-	3 pcs. min.	X	-	-
3. Physico-mechanical characteristic of rubber.	In compliance with tables 16 and 17.				
3d. For rubber metallic bushes and packing ring.	-"-	3 layings min.	X	X	X (Each laying of conventional strength, elongation relative residual deformation after rupture, hardness and change of weight in the regions, strength connected with metal. Upon agreement with customers representative change of weight in the areas may be guaranteed by the manufacturer.
3.2. For the remaining article of monolithic rubber	In compliance with Tables 16 and 17. In compliance with Table 17. In compliance with Tables 16 and 17.	Not less than on 3 on layings.	X	X	-

Continuation of Table 20

(1)	(2)	(3)	(4)	(5)	(6)
3.3. For porous rubber	In compliance with Tables 16 & 17.	Same	X	X	-
3.4. Trade rubber	In compliance with tables 16 & 17	Each laying	X	As per Para 2.12	X (As per para 2.12)
4. Changing of weight PTA|| in the regions. (if indicating in the drawing.	GOST 9.030-74.	0.3% of the batch, but at least 3 pcs.	X	-	X
5. Changing of weight of sheets of cords and pipes on the regions.	Same	One specimen from each thickness, but at least3 specimens from batch of different thickness. Test is carried out on specimens with thickness not exceeding 3 mm. with thickness from 1.0 to 2.0 grm.	X	-	X
6. Difference in Thickness of sealing ring. (Of indicated in the drawing.	~~Procedure (appendix 7)~~ in compliance with para 5.9 GOST 8752-79.	0.2% of the batches, but at least 10 pcs.	X	-	X
7. Apparent density of porous sheets	On compliance with Table 17	Not less than on 3 sheets.	X	X	X
8. Apparent density of porous PTA|| (specified in the drawing.	In compliance with the standard, specified in the drawing.	Not less than on 3 articles.	X	-	X

NOTE:

1. Sign designated as "X" means checking should be carried out "–" mean checking is not to be carrried out.

2. As per para 4: It the weight of РТД,И is less than 1 grm for specimen take number of the entire РТД,И with total weight not less than 1 grm.

   If the weight РТД,И is from 1 to 150 grm. for specimen take one РТД,И or on specimen cut from РТД,И.

   If the weight of РТД,И is above, 150 grm from each selected for swelling РТД,И is cut for three specimen.

   Improving of the quality of tested РТД,И is allowed if it is in compliance with the drawing.

3. As per para 5: testing should be carried out on three specimens, cut as per one specimen, from three sheets or three cords on three pipes.

4. For the reading of change of weight, take the arithmatical mean from the reading of all specimens, in this case if even though one of the specimen is not in compliance with the established standard, then average of the reading is not to be carried out and repeated test is carried out.

   Repeated test should be carried out for the average of the reading Similarly and it should be the final.

5. Batches of sheets with weight 60 kg. or less may be subjected to check as per para 5 upon agreement with the customer. (Chenging of weight in the regions. Manufacturing plant should guarantly for this reading.

2.7. Rubber part of vibration proof insulation support should be checked for hardness on 10% of РТДИ of the batches :

2.8. If the test results are unsatisfactory even though for one of the readings, repeated test should be carried out or double quantity of РТДИ for the reading in provided deviation.

2.8. If the repeated test results are unsatisfactory even though for one of the РТДИ , the batch should be rejected finally. Complete checking of РТДИ for the characteristics, determination of which is not connected with the destruction of РТДИ (dimensions and hardness) is allowed.

2.9. Batch of РТДИ , accepted by the technical inspection of the manufacturing plant, should be presented by the QI representative with notification of customers representative (in case of acceptance of customer's representative).

Nomenclature and quantity of accepted РТДИ should be determined by the customer's representative.

2.10. If the test results are unsatisfactory even though for one of the characteristics return to the presented batch for rejection. Manufacturing plant can present the returned batch to the customer's representative with notification about second presentation.

2.11. If the repeated test results of batches of РТДИ is unsatisfactory, even though for one of the reading the batch of РТДИ should be rejected finally.

2.12. Complete analysis of physico-mechanical, characteristics of rubber stock should be carried out not less than on

three layings in the test procedure of production not less than once in a month.

2.13. If the test results are unsatisfactory on any of the characteristics repeated test should be carried out on double quantity of specimen of rubber stock for this characteristics.

NOTE: Before repeated test mixing of all layers of rubber stock is allowed.

2.14. If the repeated test results are unsatisfactory even though from one of the characteristic the laying of rubber stock should be rejected.

2.15. Further complete analysis of each laying of rubber stock should be carried out until getting stable results not less than on 5 layings.

3. TEST PROCEDURE

3.1. Physico-mechanical characteristics of properties of rubber should be in compliance with the standard, given in Tables 16 and 17.

3.2. Type of tests and test procedure of rubber to be checked during the test are given in Table 21.

Table 21

Type of test (1)	Procedure and means of checking (2)
1. External view	Visually
2. Presence of inclusions	Visually by the way of inspection of surface and cut of rubber stock.
3. Tensile strength	GOST 270-75, specimen, of type I or II
4. Elongation at rupture	Same
5. Relative residual deformation after rupture	"
6. Shore hardness. A	GOST 263-75
7. Coefficient of resistance to cold for elastic reduction after compression.	GOST 13808-79
8. Temperature limit of brittleness.	GOST 7912-74
9. Change of elongation after aging in air.	GOST 9.024-74
10. Change of weight during the influence of standard liquid.	GOST 9.030-74
11. Relative residual deformation at static compression after aging.	GOST 9.029-74
12. Binding strength of rubber with metal when breaking.	GOST 209-75
13. Binding strength of rubber with cloth.	GOST 6768-75
14. Density (theoretical density)	GOST 267-73

(1)	(2)
15. Apparant density of porous rubber.	GOST 409-77 or in compliance with appendix 2.
16. Resistance to compression of porous rubber.	In compliance with appendix 3.
17. Residual deformation of compression of porous rubber.	In compliance with appendix 4.
18. Resitance to cold of porous.	In compliance with appendix 5.

3.3. Testing of РТД,И .

3.3.1. Testing of РТД,И should be carried out on stands, in imitators or directly on the units as per the test-procedure agreed in the established order.

4. TRANSPORTATION AND STORAGE

4.1. РТД,И sheets and rubber stock should be transported in packed condition with any type of transport which abserving the rules on transportation, established for the given type of transport.

Road transport - "General rules on transportation of load" by truely approved by the Ministry of Road transport РСФСР 30.07.71 ;

Railway transport - " Rules on transportation of loads " MOSCOW 1977 "Specifications on transportation and securing of loads " approved by the Ministry of communications USSR in 1969.

Shipping transport - "General special rules on transportation of load ", approved by the Ministry of shipping USSR in 1979 ;

River transport : "Rules of transportation of loads", approved by the Ministry of river transport of 14.08.79, No. 114.

Air transport - " Load transportation, manual for inner air lines of USSR", approved by the Ministry of civil aviation: of 25.03.75. "Rules on transportation of load through air lines" approved by the Ministry of civil aviation in 1971.

4.2. If РТД,И and sheets are transporting in minus temperatures they should not be subjected to mechanical influence and before starting production they should withstand at temperature $(20\pm5)^{\circ}C$ not less than 24 hours.

4.3. РТД,И , sheets and rubber mix should be stored in dark room, protected against the influence of direct sunlight and at a distance not less than 1m from hot devices. The hot devices should be shielded to rectify the direct influence of hot rays.

4.4. It is not allowed to keep РТД,И , sheets, rubber stock in one room with organic solvents, pitroleum products, lubricating materials, acids, alkalis, oxidising agents and other corrosive products, distructing rubber.

4.5. Rubber plastic similar РТД,И, sheets in free condition as well as these assembled in the units may be stored in room which is not hot at an ambient temperature from - 50 to $50^{\circ}C$.

4.6. РТДИ and sheets both in free condition and these assembled in the units may be stored in a room at temperature not above 25°C. РТДИ may be stored at a temperature 26-35°C. more than 80 days totally, from those days it may be stored at a temperature 36-40°C not more than 15 days totally.

4.7. If storing rubber-metal РТДИ , humidity of air should not exceed 70%.

5. INSTRUCTIONS FOR ASSEMBLY AND OPERATION OF РТДИ .

5.1. Designs of units surface finish of mated metallic surfaces, proper installation and operation of РТДИ should be in compliance with the existing technical documents, standards and guarentied by the consumer's plant of РТДИ .

5.1.1. Recommending surface finish of forming mounting place for РТДИ is as follows :

For static seal - 2.5 - 1.25

Unstatic seal - 0.63 - 0.16.

5.2. Before installation РТДИ should be cleaned against possible dirt and dust and etc.

5.3. Installation of РТДИ in the mounting place should be carried out after, excluding warpage and mechanical damages.

5.4. Scratches nicks, marks and other mechanical damages and also sharp edges are not allowed on the surfaces mated with

РТДИ of metallic components, assemblies, units. Edges of rods, cylinders and bodies should have stopping edges, facilitating assembly, of РТДИ (Fig. 1).

5.5. If during installation РТДИ is passing through the passages, slots and thread in the mounting seal it is recommended to use mandrel (Fig. 2). During assembly twisting of ring should be avoided.

5.6. If during the process if assembly РТДИ has to go through the hole, to avoid cutting it is recommended component of ring groove or to blunt up sharp edges.

5.7. To keep the completeness of РТДИ during the assembly friction surface and РТДИ itself should be lubricated with lubricants or operating means.

5.8. Assembly of РТДИ (Packing ring) is recommended to carry out in horizontal position. ~~In case of assembly in vertical position.~~ In case of assembly in vertical position РТДИ should be set with tightness along internal or external diameter.

5.9. During dismentling of РТДИ and changing it with new, metallic components mated with them should have surface finish and dimensions in compliance with the requirements of the drawing or standard.

5.10. Repeated setting of disassembled РТДИ is allowed provided keeping its completeness based on the specific requirements for the type of РТДИ .

5.11. Recommendations for the assembly of РТД,И are applicable for new machines and also during repair work.

5.12. After storage during minus temperature , before assembly РТД,И should be kept at temperature $(20 \pm 5)^{\circ}C$ for not less than 24 hrs.

5.13. Requirements for the assembly of packing rings.

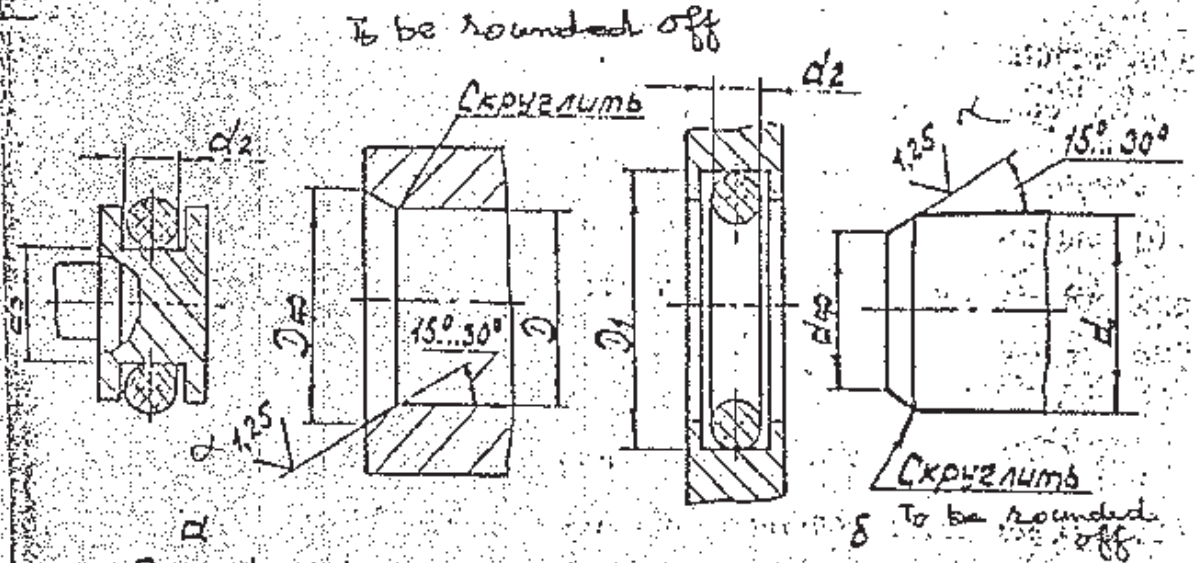
5.13.1. Before the assembly of thread of component through which carry out assembly of ring, should be lubricated with thin layer of lubricant or operating means.

5.13.2. Ring, working in plane flange joints is not recommended to lubricate in operating means. During their assembly lubricant should be used.

5.13.2. Degree of compression for the section of ring in assembled form should be ensured by the design of packing. Unit or the conditions of assembly and set up 12-25 % for movable joint and for fixed joint degree of compression is as follows : facial 15 - 40%

redial 15 - 28%

NOTE: Degree of compression of ring is determined as per the following formula : $\varepsilon = \frac{d2-h}{d2} 100$



$D_{ф} = d_3 + 2d_2 + 1$ $d_{ф} = D - 2d_2 - 1$

Fig-1.
Рис.1

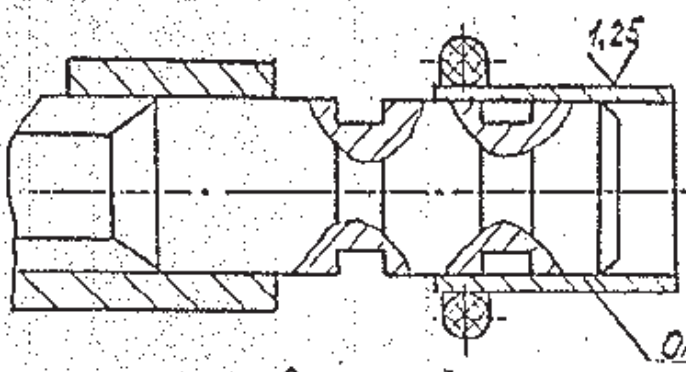


Рис.2 Fig-2.

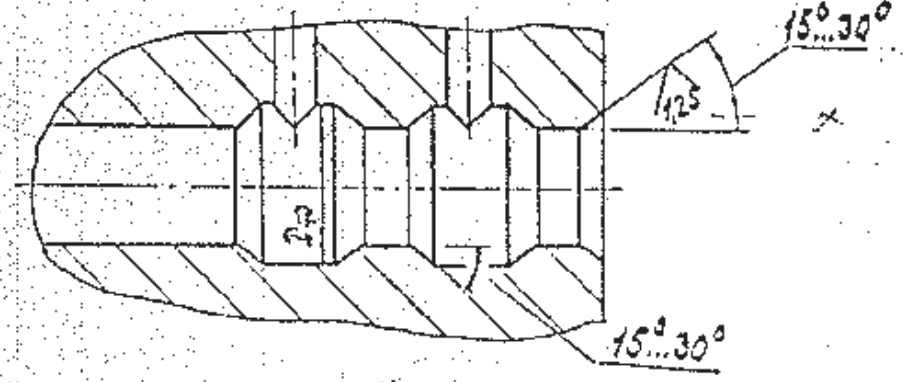


Рис.3 Fig-3

					ТУ 005-216-=5	SHEET 35
Alt	SHEET	No. OF DOCUMENT	SIGNATURE	DATE		

Where ε = degree of compression, %

d2 - Diameter of section of ring of circular section or height of ring of right angle section, mm.

h - Depth of groove of mounting, place in assembled unit, mm.

5.13.4. Degree of stretching of ring along the inner diameter should be with in 0.3-12.0%, degree of pressing along the external diameter for front seal - 3% max. (clearance is allowed).

NOTE:

1. Degree of stretching is determined by the following formula :

$$H_1 \quad \frac{d3 - d1}{d1} \quad 100,$$

Where H_1 - Degree of stretching, %

d_3 - Inner diameter of mounting place, mm (Fig. I)

d_1 - Inner diameter of ring 1 mm.

2. Degree of pressing is determined as per the following formula :

$$H2 - \frac{(d1 + 2d2) - D1}{d1 + 2d2} \quad 100,$$

H2 - Degree of pressing, %

D1 - External diameter of mounting place, mm (Fig 1)

d1 - Inner diameter of ring, mm.

d2 - Dismeter of the section of ring, mm.

5.13.5. Size of groove should be 5-20 % more than size of ring.

5.13.6. During the assembly of ring, stretching of them for a short time upto 30% of the value of elongation at rupture (Table 16) is allowed, if required.

5.13.7. Repeated installation of disassembled packing ring of radial joints are not allowed.

5.14. Requirements for the assembly of sealing ring of the device by reciprocatory motion.

5.14.1. For rubber sealing rings in the diameter of cylinder and rods 20 mm max of the groove in the pistons and casings, only open type should be used and for those above 20 mm of the groove, both opened and closed types (Fig. 4) may be used.

5.14.2. For the rubberized fabric sealing rings of all dimension of groove in the pistons and castings only the open type are to be opened.

5.15. Requirements for the assembly of rubber metallic sealing rings for the devices with rotary motion.

5.15.1. Before pressing the sealing ring to the seat, internal mounting surface of the seat and shaft should be clean and lubricated with lubricant or operating means, in this case the lubricant should be applied on the spring of the sealing ring also.

5.15.2. When setting the sealing ring with dust free feelers, inner cavity between the operating edge and duster should be filled with lubricant.

5.15.3. Pressing of sealing ring to the seat should be carried out using press or special equipment by uniform pressing along the entire face of sealing ring. In this case care should be taken for no shift of sealing ring and damager of external rubber layer of sealing ring.

5.15.4. To protect the sealing ring against unscrewing during the delivery, pressure exceeding 0.049 MPa (05 kgf/cm^2), It is suggested to use taper strip.(Fig. 5).

5.15.5. Requirements for the mating components (surface finish, hardness, radial run out and misalignment) should be in compliance with GOST 8752-79.

5.16. Requirements for the assembly of protective casing.

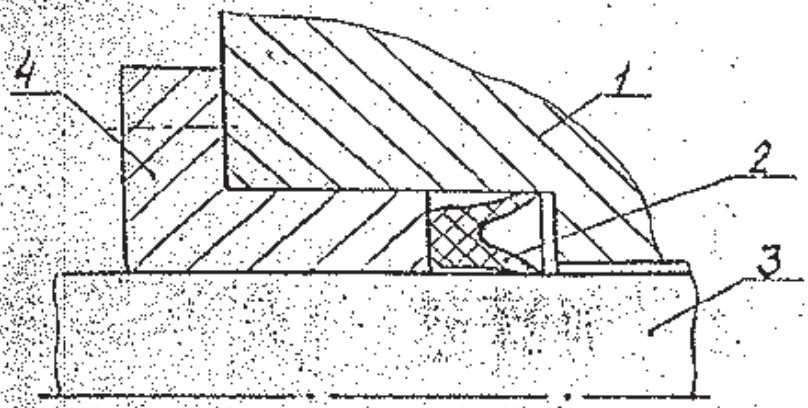
5.16.1. Degree of stretching (tension) of cases along the set diameter, should be ensured by the designs of the unit and it should constitute 5-20%.

5.16.2. Single stretching of casing upto 60% for a short time against the value of elongation at rupture (Table 16) is allowed.

5.16.3. Stretching degree (dension) of it casings of rubber 310 and 3824 C in assembled from in the specified diameter should be ensured by the designs the unit and should not exceed 8%.

Groove of open type

Канавка открытого типа



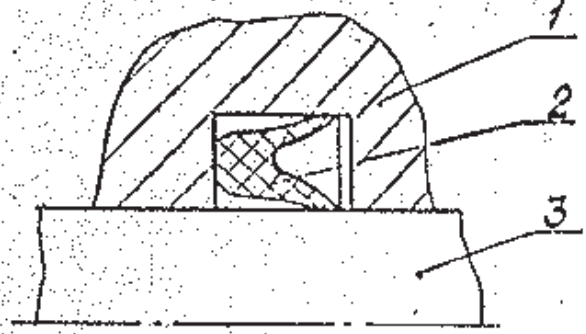
а

Body
1. Корпус
2. Манжета Sealing Ring

Rod
3. Шток
4. Крышка Cover

Groove of closed type.

Канавка закрытого типа



б

Body
1. Корпус

Sealing Ring
2. Манжета

Rod
3. Шток

Fig - 4.

Рис. 4

5.17. Requirements for the assembly and operation of shock absorbers and vibration insulating supports.

5.17.1. Voltage against load and over load should not exceed those specified in Table 22.

Table 22

MPa (Kgf/cm^2)

Type of deformation	Permissible voltage		
	Static load	Impact short-term load	Sustained dynamic load
Contraction	2.94 - 4.90 (30 - 50)	2.45 - 4.90 (25 - 50)	0.98 - 1.47 (10 - 15)
Shift,	0.98 - 1.96 (10 - 20)	0.98 - 1.96 (10 - 20)	0.29 - 0.49 (3 - 5)

5.17.2. Operation of shockabsorbers in resonance area is not allowed.

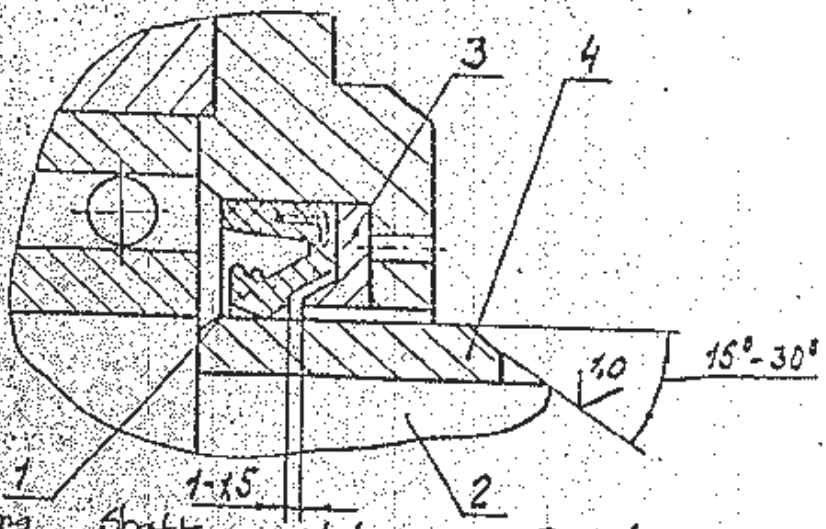
5.17.3. Designs of mounting place for the shockabsorber should avoid the contact of deformed rubber with sharp sides or edges.

5.17.4. Preliminary deformation of pressing should not exceed 40%.

5.17.5. When installing the shock-absorbers and vibro insuletin supports at the places which are not protected against influence of sun rays, it is suggested that the rubber should be coated with lightozone resistant castings of coatings with paraffin alloy with petrolatum in ratio 1:1 or covered with thick covers.

5.18. Requirements for the assembly and operation of rubber and rubber-metal bushes.

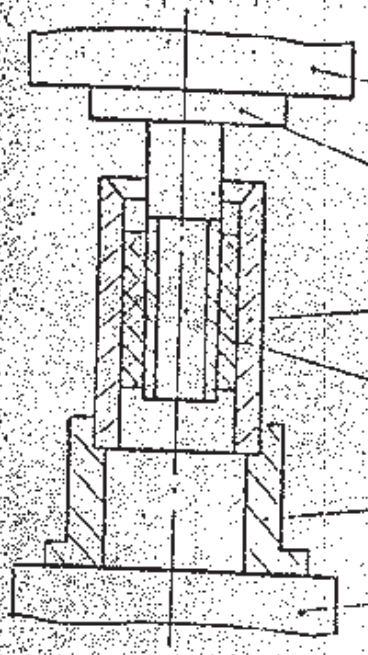
5.18.1. Pressing of bushes should be carried out using fixture (Fig. 6) with application of special lubrication.



Sealing Ring. Shaft. Stop. Bush.
1 Манжета; 2-вал; 3-упор; 4-втулка

Рис.5 Fig-5

Diagram of pressing - pressing out of rubber-metal bush.
Схема запрессовки-выпрессовки резино-металлической втулки.



Upper clamp of dynamometer
Верхний зажим динамометра
Push rod.
Толкатель
Sleave.
Стакан
Rubber metal. bush.
Втулка резино-металлическая
Support
Подставка
Louser clamp of dynamometer.
Нижний зажим динамометра

Рис.6 — Fig-6.

5.18.2. When pressing, cuttings, breaks and turning of bushes are not allowed. Skewness and projection of rubber beyond the edge of accessories should not exceed 0.5 mm.

5.18.3. Value of radial contraction of pressed bushes should be :(30-40)% in assembled hinges and (25-35)% in combined hinges.

5.19. Requirements for assembly and operation PT , sealing hatches and doors etc.

5.19.1. PTДИ, for the joints, operating during the periodic removal of compressing load, should be mechanically secured to the mounting places with glue (grade of glue is specified in the drawings).

5.19.2. Contour of mounting place for installing PT should have rounded off radius as follows :

For PTДИwith section upto 10 mm - not less than 50 mm

For PTДИwith section from 10 upto 20 - not less than 150mm

For PTДИwith section more than 20 mm - not less than 600mm

5.19.3. Degree of contraction of PTДИ in the assembled from should be ensured by the designs of the mounting place or conditions of assembly and it constitue as follows : (8-35)% for rubber codes, (15-50)% for tubes of different profile, (20-50)% for porous components, intended for sealing and (5-60)% for porous components, intended for eliminating the impacts.

5.20. Conditions of the assembly of the membrane and diaphragm should be specified in the drawings on PTДИ.

Table 17

Physico-mechanical properties of porous rubber

Code of rubber	Type of rubber	Conditions of Vulcenization: Temperature, °C	Time, min.	Physico-mechanical characteristics: Seeming density	Compressive resistance, at compression by 50% MPa.	Residual deformation at compression by 50%, max %. 23 °C 22	70 °C 22	Resitance to cold: Maximum brittleness temperature °C, not exceed.	Kv, min at temperature °C. M HyC 45	M HyC 50
1-3069	СКМС АРКМ-15 СКД	151 ± 3	20 ± 1	500-600	0.15-0.29	30	55	52 ~~52~~	-	0.40
8-105	НК, СКБ	164 ± 3	20 ± 1	500-800	0.15-0.29	30	70	40	-	0.20
1-3059	СКЭПТ	164 ± 3	30 ± 1	500-600	0.13-0.23	20	60	50	-	0.14
1-3067	СКМС-30РП	As per existing technologi-		150-500	0.08-0.25	70	-	40	0.20	-
-35	СКБ	cal regulations.		150-500	0.08-0.25	75	-	35	0.05	-
1-3082-1	СКМС-30АРКМ-15 СКД	174 ± 3	15 ± 1	500-850	0.25-0.49	-	30	40	-	0-12
8-141	СКМС-30 АРКМ-15, НК	174 ± 3	15 ± 1	500-850	0.25-0.49	-	30	35	0.05	-
8-133	СКЭПТ	170 ± 3	I Stage 120±5 II Stage 171±1	350-600	0.12-0.29	-	90	50	-	0.15
8-168	СКИ-3 СКМС-30 АРКМ-15	As per existing technological regulations.		350-500 For sheet of size 5 mm. 350-550	0.10-0.25	75	-	43 45	0.20	-

Appendix 1

DELIVERY AND ACCEPTANCE OF ACCESSORIES FOR RUBBER-METAL COMPONENTS

1. TECHNICAL REQUIREMENTS

1.1. The accessories should be in compliance with the drawing upon agreement between the supplier and the customer and requirements of present appendix.

1.2. The surface of the accessories should not have burns and sharp cutting edges.

1.3. Surface of the accessories should be clean and same for the colour. Scales, corrosion, traces of oil, paint, alkalies, cracks and foreigh inclusions or other objects reducing the metal to rubber bond strength are not allowed. Upon agreement between the supplier and customer delivery of surface finished accessories.

NOTE:

1. On the surface thin rust film forming during transportation, subjecting to the removal of without disturbing the dimensions of the accessories.

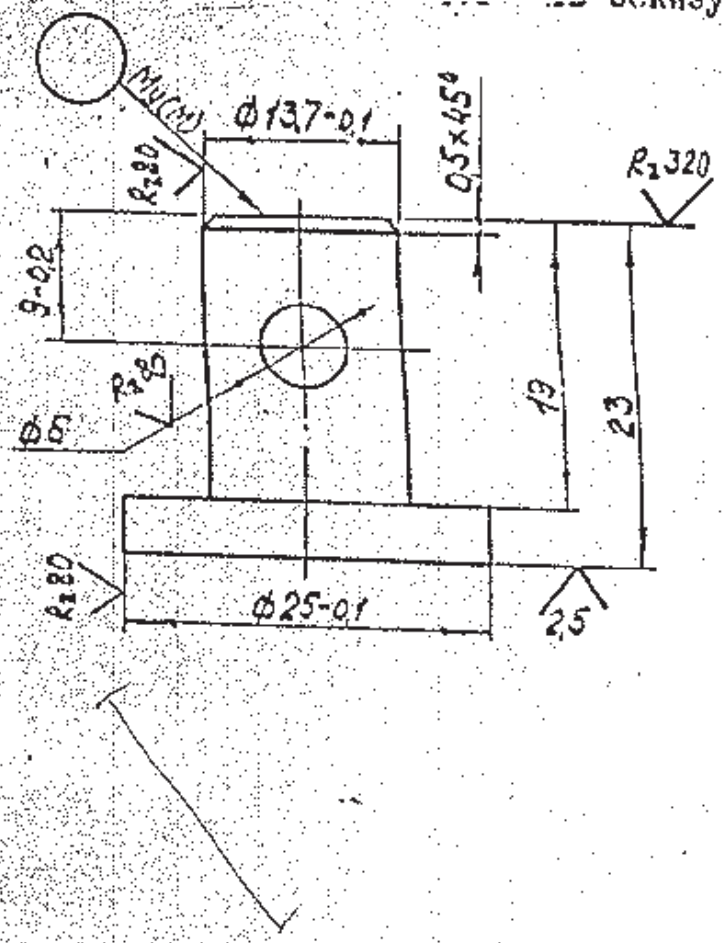
2. When binding the accessories to the rubber by applying glue processing of sodium nitrite is not allowed.

1.4. Each batch of accessories for PTA,M at which accessories to rubber binding strength is the accepting parameter make a set "group" "fungus" in quantity 1% of the batch of accessories, but not less than 10 pcs.

The fungus should be manufactured from steel 20 GOST 1050-74 or other material upon agreement between the supplier and customer.

NOTE: Upon agreement between the supplier and customer the quantity the supplier and customer the quantity of fungus can be reduced.

1.5. Metallic group should be in compliance with the sketch for the design, dimension and surface finish.



The fungus should be manufactured from steel 20 GOST 1050-74 or other material upon agreement between the supplier and customer.

NOTE: Upon agreement between the supplier and customer the quantity the supplier and customer the quantity of fungus can be reduced.

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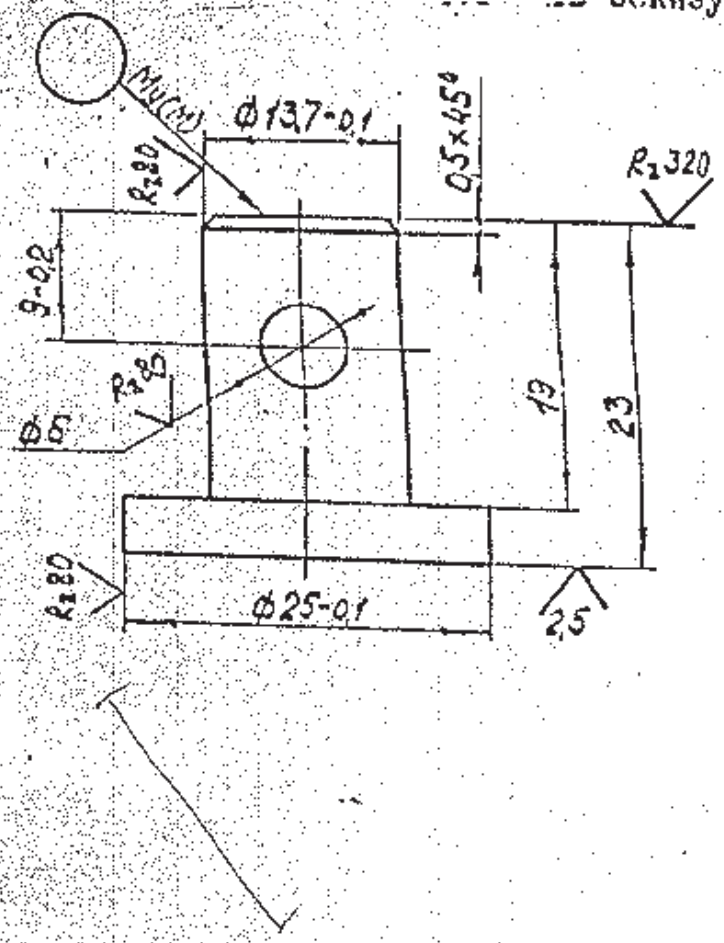


1.5.1. Unspecified limit deviations of dimensions $\pm \frac{IT14}{2}$

1.5.2. Surface finish of the group should be not lower the surface finish for the operating blank of the component before sand blasting or shot blasting.

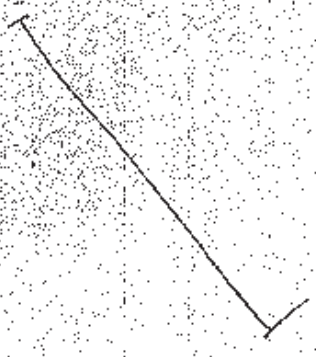
2. ACCEPTANCE RULES

2.1. The accessories should be delivered by batches, corresponding to the scope of order.

2.2. Checking of the accessories for the external appearance and dimensions should be carried out by the manufacturers factory on the 100% of the accessories.

2.3. Check test for external appearance dimensions and absence of alkali on the surface of the accessories should be carried out by the customers factory on 10% of the accessories from the received batches.

2.4. When it is detected that the accessories are not in compliance with the drawing and present append the batches should be rejected and returned to the customers factory with a statement of the customers factory within a period specified by the agreement.



3. TEST PROCEDURE

3.1. Checking of dimensions of should be carried out by multipurpose or special measuring tool on the basis of error in measurement as per GOST 8.051-81, in this case special measuring tool should be certified in compliance with GOST 8.326-78.

3.2. Compliance of the material of the accessories, indicated in the drawings, should be checked by the way of comparing the grade of material, specified in the accompanying document on accessories with the grades, specified in the drawings.

3.3. Determination of the presence of alkalies on the surface of the accessories should be carried out in the following way:

Apply at least 10 drops of the solution of phenolphthalein prepared on the dry conducting the test, on the dry and clean surface of the accessories. Using a pipet. To prepare the solution add 20-25 drops of 1% of the solution of phenolphthalein in the ethyl alcohol to 50 ml of distilled water.

Presence of alkali should be determined as per the appearance of rose colour of the indicator.

If there is no colour for the indicator for the indicator for 3 minutes, the accessories are consided with stand the test.

The presence of alkalies on the surface of the accessories should be determined at room temperature, the temperature of

the test specimen should be brought to the room temperature.

4. MARKING AND PACKING

4.1. In case of acceptance, accessories, which are accepted by QID and customers representatives should be marked by the stamp of the customers representives.

4.2. Presence of marking and stamp of production nature, which is not specified by the present instructions on the accessories, for example component number, intreplant marking which are applied on the surface, indicated in the drawings, any of the places subjected to further machining, or on the casted unmachined surfaces.

4.3. Fungus is should be marked in compliance with the designation in the drawing by marks "M" and 'MY' which specifying the grade of material, for exampel : CT-25. The marking should be applied by punching or electric spark method.

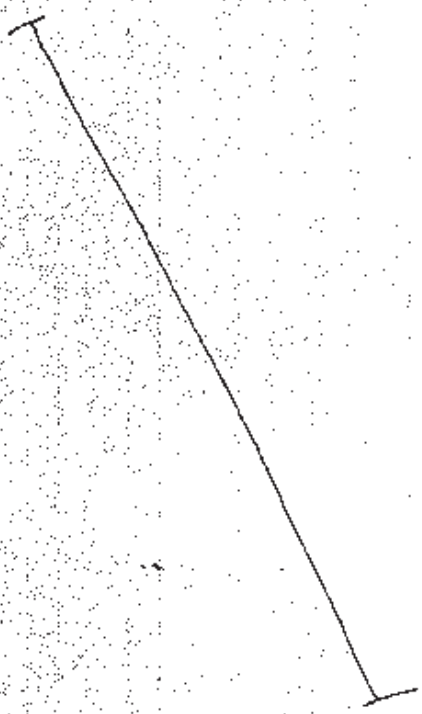
4.4. Accessories and fungus should be delivered for packing, enuring the keeping of their surfaces. Each packed case should have label, on which a stamp of QID, customers representative (in case of its acceptance) accessory number and the quantity is recorded.

4.5. Accessory and fungus which are wrapped in a paper or packed in a durable wooden boxes GOST 18573-78, GOST 16511-77, GOST 16536-78, GOST 2991-76, GOST 15841-77, which are protecting accessory against damages.

In case of its acceptance the packed boxes should be sealed with seals of QID and customers representative. Before packing upon agreement between the manufacturer and customer the accessories and the groups may be preserved, provided that after the depreservation the accessory is in compliance with para 1.3 of present appendix. Accessory, which is applied for manufacturing, РТДИ on the basis of СКФ, should not be subjected to preservation.

4.6. In case of its acceptance, in the manufacturing plant each batch of accessory with "groups" should accompany by a document on the quality (certificate) with statement of QID and customer's representative, on the compliance of accessori and groups with the present appendix.

The document on the quality (certificate) should be enclosed in a packing case which specifying "certificate here".



From of a Certificate:

Certificate NO: _____

for accessory No. _____

_____

(Manufacturing plant)

Name of the accessory	Number (designation of the accessory.	Mark of GOST or specifications of the alloy.	Actual hardness of the alloy of the accessory	Quantity of "gourps" belongs to accessory.	Quantity of accessories	Note

X - to be filled if the norm of hardness of alloy is specified in the drawing on accessory.

Form of stamp:

Customer's representative

Statement on fitness and permission for delivery.

Stamp here

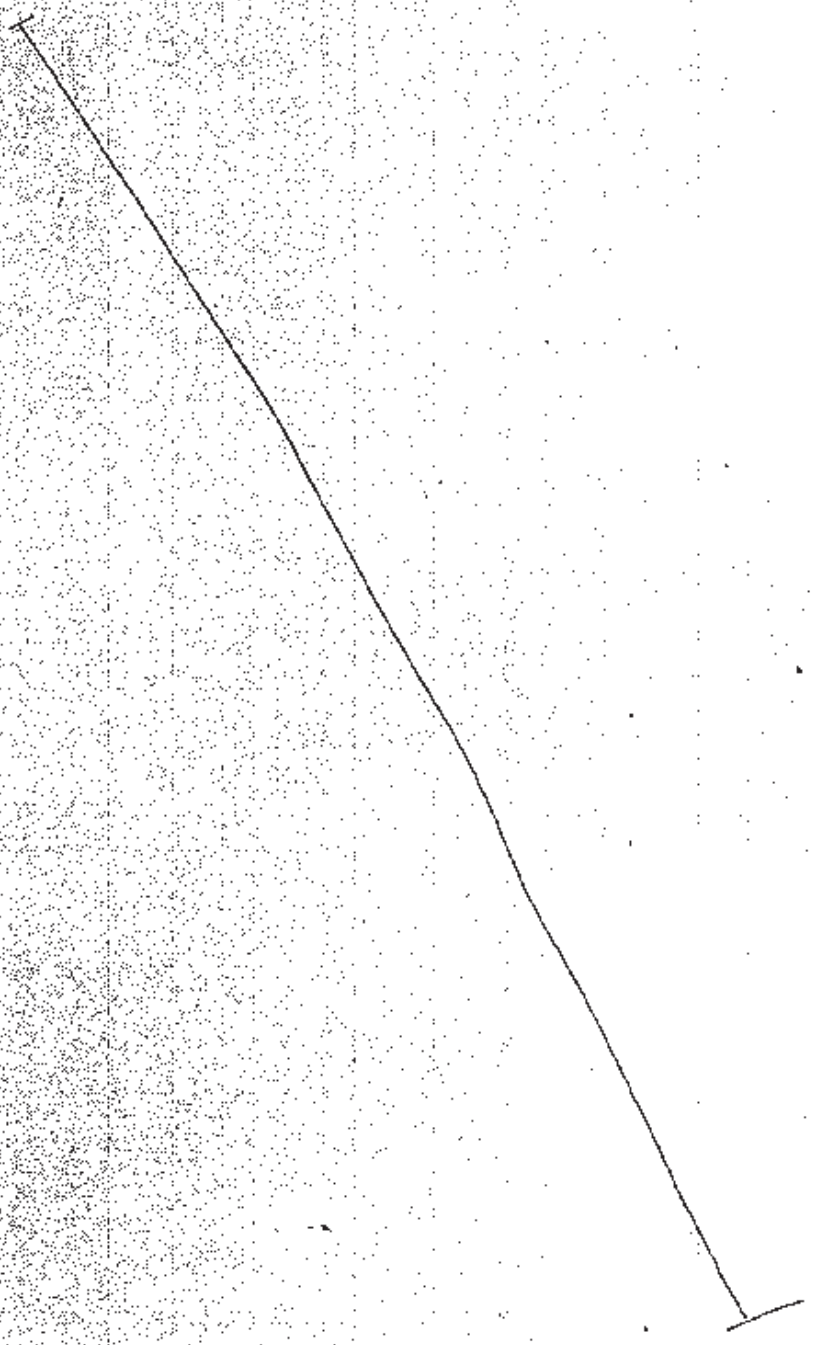
Factory director

QID chief

Statement of customer's representative

Customer's representative.

4.7. Accessory and the 'groups' should be stored under the conditions, ensuring their preservation against corrosion and mechanical damages should be protected against the effect of moisture, acid vapor and dirt.



Recommended appendix 2.

DETERMINATION OF APPARENT SOLIDITY POROUS RUBBER

The procedure is based on hydrostatic weighing of test specimen of porous rubber and is intended for the evaluation of apparent solidity of porous rubber and articles.

1. TEST SPECIMEN FOR THE TEST

1.1. Test specimen of any shape, and specially vulcanized or cut from the finished articles.

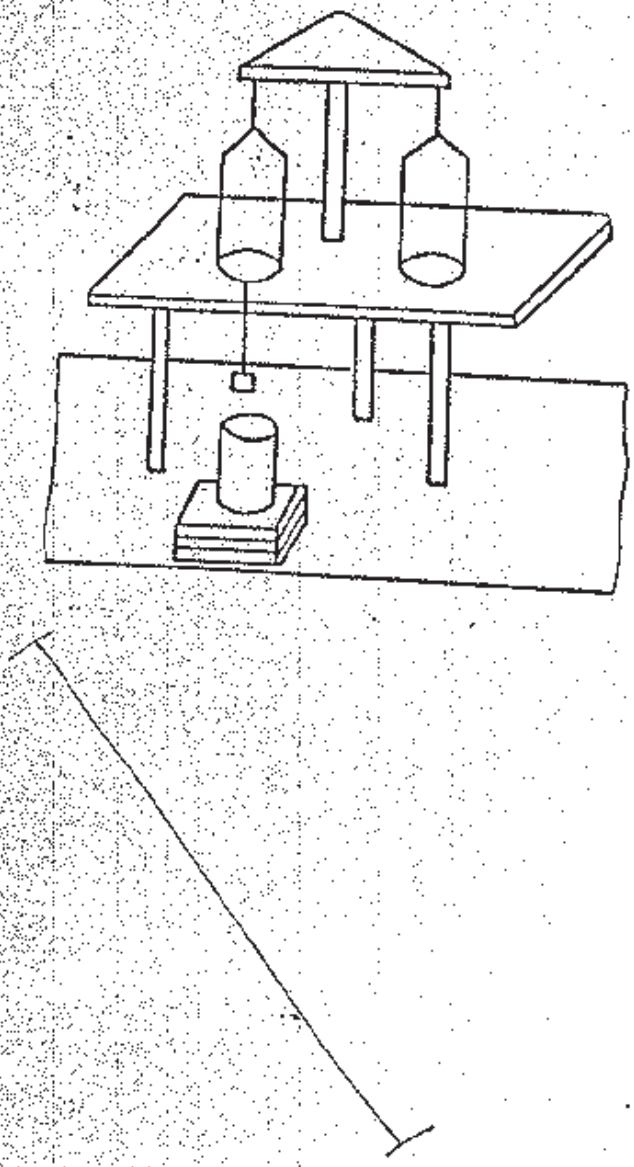
1.2. Weight of the test specimen should be not less than 0.002 kg.

NOTE: Minimum weight of the test specimen can be 0.01 kg at apparent density of rubber less than 300 kg/m^3.

2. DEVICES AND FIXTURES

2.1. Device for hydrostatic weighing consists of laboratory balances of class 4 with maximum weighing, not exceeding 200 grm and with scale denominated in GOST 24104-80E, needle for pricking to the left pan of the laboratory balances is rigidly secured and cup with distilled water

2.2. Diagram of one of the possible alternative of the possible alternative of the device is given in the figure.



2.2. Diagram of one of the possible alternative of the possible alternative of the device is given in the figure.

3. TESTS

3.1. The tests should be carried out in a room at a temperature $(25 \pm 5)^{\circ}C$.

3.2. Determine the weight of the test specimen in the air (m1)

3.3. Prick the test specimen to the needle, lot in down into the the cup with distilled water. On the surface of dipped test specimens and the needle there should not be ~~nay~~ any air bubbles.

NOTE: On the surface of the cut of test specimen, small air bubbles which comparable with dimension of pores are allowed.

3.4. Adjust the balances with the test specimen, dipped in water and determine the weight of balanced load (m2). When weighing, the test specimen should be located at below the level of water approximatly by 10 mm and it should not touch the walls and bottom of the cup.

4. CALCULATION OF THE TEST RESULTS

4.1. Apparent solidity of porous rubber (ρ_k) in kg/m^3, rounded off by 10 should be calculated as per the following formula :

$$\rho_k = \frac{m1 \cdot \rho_B}{m1 + m2}$$

Where m1 - Weight of test specimen in the air, kg.

m2 - Weight of the load required for equalizing the balances when dipping the test specimen in the water, kg.

m2 - put it by sign 'plus', if the set of weights is set to the left pan of the balances (apparent solidity of the rubber is less than 1000 kg/m^3) and by mark 'minus' if the set of weigh is set to the right pan of the balance (apparent solidity of the test specimen is more than 1000 kg/m^3) ;

PB - Density of the water, kg/m^3

Name : - Density of water is taken equal to 1000 kg/m^3) ;

4.2. Arithmatical mean of two indications, differenciating less than by 10% is taken for the test result.

4.3. Entry of the test results should be carried out by the following way :

Date of the test.	Code of the rubber	Number of the test specimen.	m1 Kg	m2,Kg + −	ρK Kg/m^3	PK.cp. kg/ m^3

Special appendix. 3

DETERMINATION OF RESISTANCE AGAINST PRESSING OF POROUS RUBBER

The procedure consists in pressing the test specimens of porous rubber and in determining unit load, required for pressing the test specimen by 50% of the initial height, intended for the evaluation of the basic properties of porous rubber - capability of them to be deformed under the effect of applied force.

1. TEST SPECIMEN FOR THE TEST

1.1. Test specimens, specified in appendix 9 should be used for the test depending upon the type of articles and procedure of their vulcenization.

2. DEVICES AND FIXTURES

2.1. The device, permitting to carry out pressing of the test specimen with measuring area with diameter of base exceeding 28 mm, under the effect of applied force and ensuring measuring of height from 0 to 25 mm with error ± 0.1 mm.

2.1.1. One of the possible alternatives of the device are :

Device BH - 5404 with additional set of loads ;

Device 2115 ПС - 0.1 СД .

2.2. Stop Watch (GOST 5072-79E)

3. TEST

3.1. Place the test specimen on the bearing area of the device, cover with measuring area, determine its initial height with error upto 0.1 mm.

3.2. Load the test specimens with loads subsequently until pressing strain (50±5)% of the preliminary height. Indications of height of loaded test specimen hi should be noted accross (30±5) s after laying the series load.

4. ANALYSIS OF RESULTS

4.1. Resistance against pressing in MPa is calculated as per the following formula :

$$T = \frac{P}{S} \cdot 10^{-6}$$

Where P - Load required for pressing the test specimen by 50 %, H

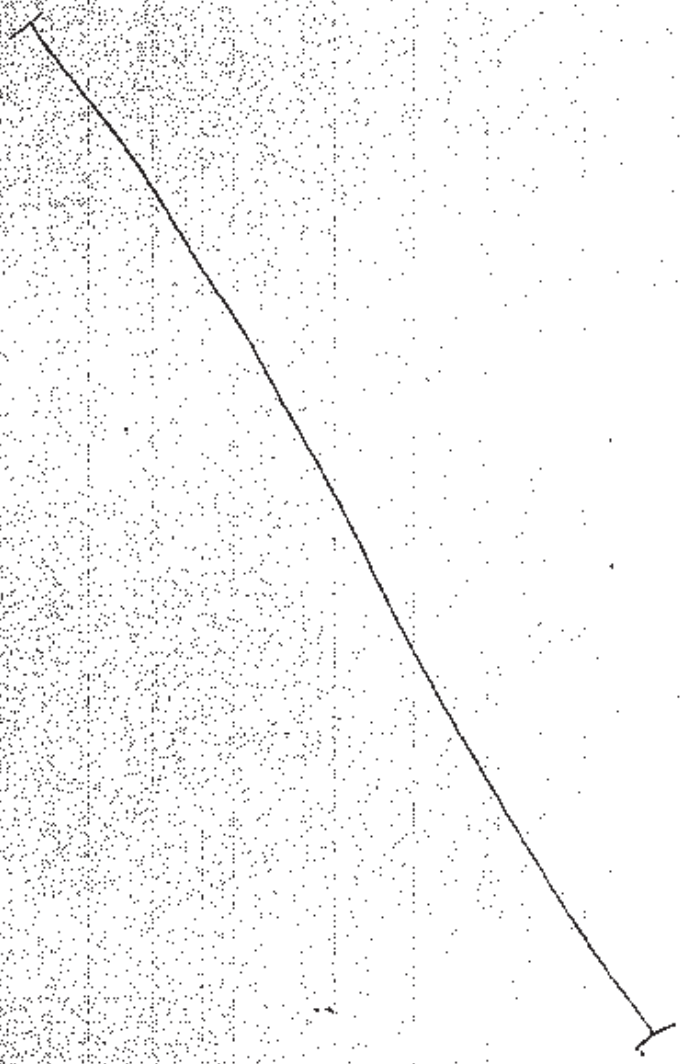
S - Area of the base of first test specimen.

4.2. Arithmatical mean of three parallel determinations should be taken for the test results.

4.3. Entry of test results should be carried out in the following :

4.3. Entry of test results should be carried out in the following way :

Date of test	Code of rubber	Number of the test specimen.	ho mm	h1 mm	P1 Kg	P1 N	T MPa	T_{cp} MPa



Special. appendix-4.

TEST OF POROUS RUBBER FOR RELATIVE RESIDUAL DEFORMATION OF PRESSING.

Test of porous rubber for the residual deformation of pressing, consist in pressing of test specimens between the parallel plates, keeping them in a pressed condition for a determined temperature and measuring the relative residual deformation of pressing. The given procedure should provide the test porous rubber for the determination of relative residual deformation when pressing by 50%, accumulated for 22 hrs. at temperature 23 and 70°C.

1. TEST SPECIMENS FOR THE TEST

1.1. The test specimen specified in appendix 9 should be taken for the test depending upon the type of article and procedure for their vulconization.

2. DEVICES AND EQUIPMENTS

2.1. Screw-clamp is two parallel steel plates connected with bolts. The given stage of pressing should be ensured by stopping device, which is set to the lower plate.

Difference in the height of separate limiting devices of one screw-clamp should not exceed 0.1 mm.

2.2. Thermostat for thermostatic control (type УЦ-Р-3, ШЦ-015).

2.3. Vernier calliper GOST 166-80 or thickness measuring gauge with value of division 0.1 mm.(type TP-25-60 or TP-25-100 GOST 11358-74).

3. TEST

3. Measure the height of the test specimens with accuracy upto 0.1 mm.

3.2. Set the stopping devices to the lower plate of the screw clamp.

The stopping devices should ensure the pressing the test specimens by (50±5)%.

3.3. Place the test specimens on the lower plate in such a way so that the distance between the test specimen is not less than 5 mm and press the screw - clamps until the upper plate is touched with the stopping devices.

3.4. Keep screw - clamps with the test specimens at a temperature (23±3)°C or (70±3)°C for (22 ± 0.5) hrs.

3.5. On expiry of the time of test the screw-clamps are taken out from the thermostat, unclamp the screw clamp and remove the test specimens from the lower plate. The test specimens which are set free from the pressing load and left them in free condition at room temperature for the restoring for (30±2) minutes.

3.6. Measure the height of after the restoring.

3.7. Number of tested test specimens for each determination should be not less than three.

4. ANALYSIS OF THE RESULTS

4.1. Relative residual deformation (ε_{OCT}) in percentages should be calculated as per the following formula :

$$\varepsilon_{OCT} = \frac{ho - h2}{ho - h1} \quad 100\%$$

Where ho - Initial height of the test specimen, mm ;

h1 - Height of the pressing test specimen, mm ;

h2 - Height of the test specimen after restoring for 30 minutes.

4.2. Arithmatical mean of three indications should be taken forth test result.

4.3. Entry of test results should be carried out in the following way.

Date of test.	Code of rubber	Number of the test speci-men.	ho mm	h1 mm	h2 mm	ε residual %	ε Arith-matical mean,%

Suggested appendix 5.

DETERMINATION OF THE CHARACTERISTICS OF COLD RESISTANCE OF POROUS RUBBER

The present procedure consist in the determination of two characteristics.

1. Maximum brittleness temperature.

2. Co-efficient of clastic restoration specifies the capability of rubber against restoration after pressing in minus temperature.

Nature of the procedure of determining temperature range of brittleness consist in determining the lowest temperature during which, under the conditions of the test rubber is not destroyed.

Determination of the co-efficient of clastic restoration consist in measuring the restorability of the test specimen at the given minus temperature pressing upto 50% at normal temperature and imposing effect of decreased temperature. The results should be compared only at the same temperature.

1. Determination of the temperature range of brittleness of porous rubber.

1.1. Test specimens for the test.

1.1.1. Test specimens which are cut from the porous rubber as strips with dimension $(30.0 \pm 5.0) \times (2.0 \pm 0.5)$ mm in such a way so that on one of the side 30.0 x 6.5 mm surface film is protected.

1.2. Test.

1.2.1. Temperature range of brittleness, of Txp should be determined as per GOST 7912-74.

2. Determination of the coefficient of elastic restoration.

2.1. Test-specimens for the test.

2.1.1. The test-specimens, specified in appendix 9 should be used depeding upon the type of articles and procedure for their Vulcanization for the test.

2.1.2. Number of test specimens, for the test should be at least three.

2.2. Devices and equipments.

2.2.1. The device for testing should be ensured the following:

Pressing of the test specimens, placed between the bearing and measuring areas of the device.

Cooling of the tested test specimen in a liquid medium upto temperature of minus 60°C.

With-standing the temperature with error ± 1°C ;

Measuring of the height of test specimen upto 25 mm with error ± 0.05 mm ;

Pressing and releasing of test specimen against load for a time not exceeding 0.1 mm.

2.2.2. Stop watch (GOST 5072-79 E).

2.3. Test.

2.3.1. Place the test specimen on the area of the device and measure initial height h_o at temperature (23+5)°C.

2.3.2. Press the test specimen upto height h1, equal $\frac{h_{\phi}}{2}$, which correspond to the pressing by (50±2)%, after that lower part of the device with pressed test specimen is dipped in to the Dewar flask with full dipping of it in cooled liquid.

2.3.4. Keep the test specimen at a temperature of the test for (5 ± 0.5) min.

2.3.5. On expiry of the specified test specimen release it from the load, without removing from the cooling liquid.

2.3.6. The test specimen released from the load should be kept in a cooling liquid at a temperature of the test for (3.0±0.25) min. and measure the height of the test specimen h2.

2.4. Analysis of the results.

2.4.1. Co-efficient of elastic restoration (KB) with accuracy upto 0.01 should calculated as per the following formula :

$$KB = \frac{h2-h1}{ho-h1}$$

Where

ho = Initial height of the test specimen, mm ;

h1 = Height of the pressed test specimen.

h2 = Height of the test specimen after the restoration, mm.

2.4.2. Arithmatical mean of the characteristics of three determinations should be taken for the test result.

2.4.3. Entry of the test results should be carried out in the following way :

Date of test	Code of the stock	Number of the test-speci-men.	ho MM	h1 MM	h2 MM	KB	KB	cP

Physico mehcanical properties of rubber and technological properties of rubber stock.

TABLE-16

(1) Grade of rupper	(2) Type of raw rubber	(3) Mods of vulconisation and thermostatic control (T) of the standard test specimens: Temperature (20)	(3) Time, min. (21)	(4) Conventional tensile strength, MPa (Kgf/cm²), min.	(5) Elongation at rupture, %, min.	(6) Relative residual deformation after ruputre max.	(7) Shore hardness of the unit, in the range.	(8) Coefficient of cold resistance as per elastic restoration after pressing, min.: Temperature °C (22)	(8) Value, KB (23)	(9) Temperature range of brittleness °C, not more than.	(10) Change inclongation after ageing in air: Temperature °C (24)	(10) Time hr. (25)	(10) Norm at the ranges (26)	(11) Relative residual deformation in the atmosphere when pressing and after rupture: Temperature (27)	(11) Time, hr. (28)	(11) Pressing, % (29)	(11) Value of relative residual deformation (30)	(12) Change in the weight during the effect of standard liquid СЖР-2 for 72 hrs at a temperature 100°C, % at the ranges.	(13) Binding strength of rubber with metal when separating (steel 20), MPa (Kgf/cm²), min.	(14) Electric strength KV/mm, min.	(15) Volume resistivity, ohm, m 10^{-2}	(16) The loss tangent of a dielectric.	(17) Solidity, kg/m³ 10^3 (maximum deviations ±0.05)	(18) Storage life of rubber stock, Month	(19) Technological properties (for the alloys)
Б-I4-I	СКН-18	I5I±3 I43±3	20±I,0 40±2,0	II,8 (I20)	I40	8	75-85	minus минус 45	0,I5	minus минус 45	I00	24	from minus от минус 45 до 0 to	–	–	–	–	from от 0 до 8 to	–		–	–	I,28	4	To be shaped, to be extruded.
В-I4	СКН-18	I5I±3 I43±3	20±I,0 40±2,0	8,8 (90)	I40	8	70-80	minus минус 45	0,I5	minus минус 45	I00	24	from minus от минус 45 до 0 to	–	–	–	–	from minus от минус 2 до плюс 7 to plus	–		–	–	I,28	4	To be shaped, to be extruded.
5I-3028	СКН-18	I5I±3	I5±I,0	9,8 (I00)	I40	8	78-88	minus минус 40	0,35	–x)	I00	24	from minus от минус 45 до 0 to	–	–	–	–	from от 1 до 10 to	3,9 (40)		–	–	I,3I	6	To be shaped, rolled and extruded for blank.
ИРП-1352	СКН-18	I5I±3	40±2,0	5,9 (60)	300	8	50-60	minus минус 50	0,30	minus минус 55	I00	24	from minus от минус 55 до 0 to	–	–	–	–	from от 0 до 5 to	–		–	–	I,24	2	To be shaped, rolled and extruded .
5I-3029	СКН-18, СКН-26	I5I±3	20±I,0	9,8 (I00)	I40	6	7I-82	minus минус 40	0,50	minus минус 45	I00	24	from minus от минус 45 до плюс I0 to	–	–	–	–	from minus от минус 4 до плюс 4 to plus	3,9 (40)		–	–	I,33	3,5	To be shaped, rolled and extruded.
5I-3029Н	СКН-18Н, СКН-26Н	I5I±3	20±I,0	7,8 (80)	I40	6	68-80	minus минус 40	0,50	–x)	I00	24	от минус 45 до плюс I0	–	–	–	–	from minus от минус 8 до плюс 2 to plus	–		–	–	I,33	3,5	To be shaped, rolled and extruded.
ИРП-I078	СКН-18, СКН-26	I5I±3	40±2,0	I0,8 (II0)	I30	6	75-85	–	–	minus минус 30	I00	24	from minus от минус 45 до 0 to	–	–	–	–	from 1 to от 1 до I0	3,9 (40)		–	–	I,37	3	To be shaped, and extruded for blank.
783-2	СКН-18, СКН-26	I43±3	30±I,5	I2,3 (I25)	250	I0	65-80	–	–	minus минус 30	I00	24	from minus от минус 30 до плюс I0 to plus	–	–	–	–	from от 1 до 10 to	3,4 (35)		–	–	I,2I	2	To be shaped, and extruded for blank.
5I-I452	СКН-26	I5I±3	20±I,0	9,8 (I00)	I40	I0	70-80	minus минус 40	0,I0	minus минус 35	I00	24	from minus от минус 55 до плюс I0 to plus	–	–	–	–	from minus от минус 7 до 0 to	3,9 (40)		–	–	I,29	I2	To be shaped, rolled and extruded.
983I	СКН-26	I43±3	20±I,0	9,8 (I00)	300	20	55-70	–	–	minus минус 25	I00	24	from minus от минус 50 до 0 to	–	–	–	–	from minus от минус 1 до плюс 6 to plus	3,4 (35)		–	–	I,18	3	To be shaped, and extruded for blank.
4326-I	СКН-18	I43±3 I5I±3	20±I,0 I5±I,0	7,8 (80)	I70	I2	65-80	–	–	minus минус 45	I00	24	от минус 55 до 0	–	–	–	–	x)	–		–	–	I,26	4	To be shaped, rolled and extruded.
3825	СКН-40	[illegible] [illegible]	30±I,5 20±I,0	9,8 (I00)	I20	I0	80-95	–	–	minus минус 25x)	I00	24	от минус 50 до 0	I00	24	20	80	x)	2,4 (25)		–	–	I,3I	4	To be shaped.

Продолжение табл. I6 (Contd. table 16) ~~Стр.55~~

(1) Марка резины	(2) Тип каучука	(3) Режим вулканизации и термостатирования (Т) стандартных образцов: Температура, °С (20)	Время, мин. (21)	(4) Условная прочность при растяжении, МПа (кгс/см2), не менее	(5) Относительное удлинение при разрыве, %, не менее	(6) Относительная остаточная деформация после разрыва, %, не более	(7) Твердость единиц Шор А, в пределах	(8) Коэффициент морозостойкости по эластическому восстановлению после сжатия, не менее: температура, °С (22)	величина, Кв (23)	(9) Температурный предел хрупкости, °С, не выше	(10) Изменение относительного удлинения после старения в воздухе: Температура, °С (24)	Время, ч (25)	Норма в пределах (26)
Ю-68-I	СКН-I8, НАИРИТ Chloroprene rubber	I5I±3 I43±3	20±I,0 30±I,5	8,8 (90)	250	I2	55-70	Minus минус 50	0,I8	Minus минус 50	I00	24	From minus от минус 45 до 0 to
5I-3043	СКН-I8, наирит Chloroprene Rubber	I5I±3	30±I,5	9,3 (95)	500	35	50-60	минус Minus 50	0,30	Minus минус 50	I00	24	от минус 40 до 0 to
5I-2059	СКН-I8, наирит	I5I±3	I5±I,0	7,8 (80)	500	I5	40-55	минус Minus 50	0,20	Minus минус 45	I00	24	от минус 45 до 0
5I-3058	СКН-I8, наирит	I5I±3	20±I,0	4,4 (45)	300	20	-	минус Minus 50	0,20	Minus минус 45	I00	24	from minus от минус 50 до 0 to
638 МА-2	СКН-I8М, наирит	I5I±3	30±I,5	4,4 (45)	500	35	35-50	-	-	Minus минус 40	I00	24	от минус 45 до 0
ИРП-I266	СКТВ-I Chloroprene Rubber	I5I±3 Т200±5	20±I,0 6ч±0,2ч	2,4 (25)	I00	-	38-58	минус Minus 50	0,60	Minus минус 60	250	72	from minus от минус I5 до upto плюс 65 plus
5I-I46I	СКЭП	I70±3	I5±I,0	8,8 (90)	I30	6	76-88	минус Minus 50	0,20	-x)	I50	72	from minus от минус 40 до 0 upto
5I-3080	СКЭПТ	I58±3	40±2,0	5,9 (60)	350	22	48-58	минус Minus 50	0,20	-x)	I50	24	from minus от минус 50 до 0 upto
5I-3042	СКЭПТ Chloroprene Rubber	I58±3	20±I,0	I4,3 (I45)	I30	I2	86-96	минус Minus 40	0,I5	x)	I50	24	от минус 50 до 0
ИРП-I287	СКФ-26	I5I±3 I58±3 Т200±5	30±I,5 24ч±0,3ч 20±I,0	II,8 (I20)	I20	I0	70-82	-	-	-	250	72	from minus от минус 40 до upto плюс 25 plus
НО-68-IМ	СКН-I8М, наирит Chloroprene Rubber	I5I±3 I43±3	20±I,0 30±I,5	7,8 (80)	250	I2	55-70	минус Minus 50	0,I8	Minus минус 50	I00	24	from minus от минус 45 до 0 upto

(1) Марка резины	(11) Относительная остаточная деформация при сжатии после старения в воздушной среде, %, не более: Температура, °С (27)	Время, ч (28)	Сжатие, % (29)	Величина относит. остаточной деформации (30)	(12) Изменение массы при воздействии стандартной жидкости СЖР-2 за 72 ч при температуре 100 °С, % в пределах	(13) Прочность связи резины с металлом при отрыве (сталь 20), МПа (кгс/см2), не менее	(14) Электрическая прочность кВ/мм, не менее	(15) Удельное объемное сопротивление, Ом.м . 10^{-2}	(16) Тангенс угла диэлектрических потерь	(17) Плотность, кг/м³ . 10^{3} (предельное отклонение ±0,03)	(18) Срок хранения резиновой смеси, месяцев	(19) Технологические свойства резиновой смеси (для справки)
Ю-68-I	-	-	-	-	from upto от 6 до I5	2,9 (30)	-	-	-	I,24	3	To be shaped, rolled and extruded.
5I-3043	-	-	-	-	-	-	I5	10^{12}	-	I,37	6	To be shaped, rolled and extruded.
5I-2059	-	-	-	-	from upto от 6 до I6	2,9 (30)	-	-	-	I,27	6	To be shaped, rolled and extruded for blank.
5I-3058	-	-	-	-	-	with cotton с тканью х/б, кН/м I,0 cloth	-	-	-	I,26	2	Lubricating compound for cotton cloth.
638 МА-2	-	-	-	-	from upto от 3 до I5	-	-	-	-	Data to be collected данные набираются	3,0	To be shaped and rolled.
ИРП-I266	200	24	20	45	-	-	I5	10^{13}	0,07	I,I9	6	To be shaped and extruded for blank.
5I-I46I	I00	24	20	I5	-	-	-	-	-	I,I5	3	To be shaped, to be extruded.
5I-3080	-	-	-	-	-	-	-	-	-	I,05	6	To be shaped, to be extruded.
5I-3042	-	-	-	-	-	-	-	-	-	I,I9	6	To be shaped, extruded and rolled.
ИРП-I287	200	24	20	45	-	-	I0	10^{12}	0,I	2,I0	3	To be shaped, extruded for blank on augering.
НО-68-IМ	-	-	-	-	from upto от I до I3	-	-	-	-	I,24	3	To be shaped, extruded and roll

Марка резины (1)	Тип каучука (2)	Режим вулканизации и термостатирования (Т) стандартных образцов (3): Температура, °С (20)	Время, мин. (21)	Условная прочность при разрыве, МПа (кгс/см2), не менее (4)	Относительное удлинение при разрыве, %, не менее (5)	Относительная остаточная деформация после разрыва, %, не более (6)	Твердость единиц Шор А, в пределах (7)	Коэффициент морозостойкости по эластич. восстановлению, после сжатия, не менее (8): Температура, °С (22)	Величина, Кв (23)	Температурный предел хрупкости, °С, не выше (9)	Изменение относительного удлинения после старения в воздухе (10): Температура, °С (24)	Время, ч (25)	Норма в пределах (26)	Относительная остаточная деформация при сжатии после старения в воздушной среде, не более (11): Температура, °С (27)	Время, ч (28)	Сжатие, % (29)	Величина относительной остаточной деформации (30)	Изменение массы при воздействии станд. жидкости СЖР-2 за 72 ч при температуре [illegible] (12)	Прочность связи резины с металлом при отрыве (сталь 20), [illegible] не менее (13)	Электрическая прочность, кВ/мм, не менее (14)	Удельное объемное сопротивление, Ом.м (15)	Тангенс угла диэлектрических потерь (16)	Плотность, т/м3 [illegible] (17)	Срок хранения резиновой смеси, месяцы (18)	Технологические свойства резиновой смеси (для справки) (19)
5I-I435	СКФ-26	I5I±3 Т-200+5	30±I,5 24ч±0,3ч	I2,8 (I30)	80	I0	80-90	–	–	–	250	72	from minus от минус 45 to plus плюс I0	I80	24	20	50	–	–	–	–	–	2,27	I	To be shaped, extruded for blank on augering.
ИРП-I3I6	СКФ-26	I5I±3 Т 200±5	30±I,5 24ч±0,3ч	I5,7 (I60)	65	5	76-88	–	–	–	200	72	from minus от минус 55 to plus плюс 25	200	24	20	45	–	–	–	–	–	I,95	3	To be shaped.
ИРП-I3I4-I	СКФ-32	I5I±3 I70±4 I30±4	30±I,5 I5±I,0 I0±I,0	I9,6 (200)	90	I0	76-86	–	–	–	200	72	from minus от минус 65 до to плюс plus 25	I50	24	20	70	–	–	–	–	–	I,88	2	To be shaped extruded for blank on augering.
ИРП-3032	СКФ-32	I5I±3	40±2,0	9,8 (I00)	350	25	50-65	minus минус 40	0,I0	–	I50	24	from minus от минус 35 to plus плюс I5	–		–	–	–	–		10^{10}	0,4	I,68	3	To be shaped extruded for blank on augering.
ИРП-I225А	СКФ-32	I58±3 Т-200±5	30±I,5 7ч±0,2ч	I3,7 (I40)	I30	I5	75-90	–	–	–	200	72	from minus от минус 25 to plus плюс 30	I50	24	20	60 –	–	–	–	–	–	2,I2	3	To be shaped.
ИРП-I320	СКМС-I0	I5I±3	I5±I,0	7,4 (75)	I80	I0	65-75	minus минус 60	0,50	minus минус 65	I00	24	from minus от минус 50 to plus плюс I0	–	–	–	–	–	–	–	–	–	I,I6	9	To be shaped, rolled and extruded for blank.
ИРП-I32I	СКМС-I0	I5I±3	I5±I,0	5,9 (60)	200	5	55-70	minus минус 60	0,45	minus минус 65	I00	24	from minus от минус 50 to plus плюс I0	–	–	–	–	–	–	–	–	–	I,I7	7	To be shaped, rolled and extruded for blank.
5I-I7I0	СКФ-26	I70±3 Т 200 ±0,5 или Т 250 ±0,5	I0±I,0 24ч±0,3ч 6ч±0,2ч	II,6 (II8)	I70	I5	72-82	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	I,88	3	To be shaped, extruded for blank on augering.
I847	НК	I5I±3	I5±I,0	I5,7 (I60)	600	32	35-50	–	–	minus минус 45	70	24	x)	–	–	–	–	–	–	–	–	–	I,05	4	To be shape and rolled.
33II	НК	I43±3	I0±I,0	I4,7 (I50)	700	25	30-45	–	–	minus минус 50	70	24	x)	–	–	–	–	–	–	–	–	–	0,98	4	To be shape and rolled.
44-3	НК	I5I±3	40±2,0	I6,7 (I70)	600	30	30-45	–	–	–	70	24	x)	–	–	–	–	–	–	–	–	–	I,I8	4	To be shape and rolled.
98-I	СКН-I8	I43±3	30±I,5	4,9 (50)	I60	8	50-65	–	–	minus минус 55	I00	24	x)	–	–	–	–	–	–	–	–	–	I,I6	4	To be shaped.
3I0	СКН-26	I43±3	25±I,0	4,9 (50)	500	40	35-50	–	–	–	I00	24	x)	–	–	–	–	–	–	–	–	–	I,22	4	To be shaped.
3824с (3824)	СКН-26	I43±3	30±I,5	6,4 (65)	320	20	40-55	–	–	minus минус 40	I00	24	x)	–	–	–	–	–	–	–	–	–	I,I9	4	To be shaped, to be extruded.
I0876	СКМС-30 АРКМ-I5	I5I±3	20±I,0	4,9 (50)	300	30	50-65	–	–	–	I00	24	x)	–	–	–	–	–	–	–	–	–	I,2I	4	To be rolled.

(1) Марка резины	(2) Тип каучука	(3) Режим вулканизации и термостатирования (Т) стандартных образцов: Температура, °С (20)	(3) Время, мин. (21)	(4) Условная прочность при растяжении, МПа (кгс/см²), не менее	(5) Относительное удлинение при разрыве, %, не менее	(6) Относительная остаточная деформация после разрыва, %, не более	(7) Твердость по Шору А, в пределах	(8) Коэффициент морозостойкости по эластическому восстановлению после сжатия, не менее: Температура, °С (22)	(8) Величина, Кв (23)	(9) [illegible]	(10) Изменение относительного удлинения после старения в воздухе: Температура, °С (24)	(10) Время, ч (25)	(10) Норма в пределах (26)	(11) [illegible] (27)	(11) (28)	(11) (29)	(11) (30)	(12) [illegible]	(13) [illegible]	(14) [illegible]	(15) [illegible]	(16) [illegible]	(17) [illegible]	(18) [illegible]	(19) [illegible]
8615 Э	СКС-30	I5I±3	20±I,5	4,4 (45)	300	35	45-55	минус 50 Minus	0,25	Minus минус 50	I00	24	from minus от минус 40 до 0 to	–	–	–	–	–	I,9(20)	15	10^11	–	I,35	6	To be shaped, rolled and extruded for blank.
ИРП-I3I5	СКИ-3	I43±3	25±I,0	25,5 (260)	500	45	60-70	минус 50 Minus	0,30	Minus минус 45	I00	24	от минус 40 до плюс 10	–	–	–	–	–	3,9(40)	–	–	–	I,21	2	To be shaped, rolled and extruded.
5I-3060	СКИ-3	I43±3	30±I,5	20,6 (210)	450	35	60-70	Minus минус 50	0,30	Minus минус 40	I00	24	от минус 40 до 0	–	–	–	–	–	4,9(50)	–	–	–	I,2I	2	To be shaped, rolled and extruded.
ИРП-I357-2	СКИ-3 СКД	I43±3	20±I,0	9,8 (100)	350	20	57-70	Minus минус 50	0,50	Minus минус 60	I00	24	от минус 50 до 0	–	–	–	–	–	2,9(30)	–	–	–	I,19	2	To be shaped, rolled & extruded for bank.
ИРП-I346-3	СКИ-3, СКД	I43±3	25±I,0	I5,7 (160)	600	25	40-50	Minus минус 60	0,I0	Minus минус 60	I00	24	from minus от минус 50 до 0 to	–	–	–	–	–	2,9(30)	–	–	–	I,03	3	To be shaped, rolled and extruded.
ИРП-I347-2	СКИ-3, СКД	I43±3	20±I,0	I6,7 (170)	500	25	47-60	минус 60 Minus	0,I0	Minus минус 60	100	24	от минус 55 до 0	–	–	–	–	–	2,4(25)	–	–	–	I,15	3	To be shaped, rolled and extruded.
ИРП-I348-2	СКИ-3, СКД	I43±3	20±I,0	I2,3 (125)	300	20	60-75	минус 50 Minus	0,20	Minus минус 55	I00	24	от минус 65 до 0	70	22	30	40	–	2,9(30)	–	–	–	I,36	3	To be shaped, rolled and extruded.
5I-2062	СКИ-3, СКМС-30	I5I±3 I43±3	20±I,0	I4,7 (150)	550	20	40-55	минус 50 Minus	0,20	Minus минус 45	I00	24	from minus от минус 50 до 0 to	70	24	30	30	–		20,0	10^15	0,0025	I,27	6	To be shape and rolled.
5I-I562	СКИ-3ПТ	I43±3	I5±I,0	2I,6 (220)	650	20	35-45	–	–	Minus минус 45	I00	24	от минус 50 до 0	–	–	–	–	–	–	–	–	–	1,00	I	To be shaped, rolled and extruded.
5I-3050 (пищевая)	СКН-26М	I5I±3	I5±I,0	I0,8 (110)	390	20	50-60	–	–	–	I00	24	от минус 40 до 0	–	–	–	–	–	–	–	–	–	I,I6	3	To be shaped, rolled and extruded.
[illegible]	СКЭПТ марка 40 и 50	I5I±3 I60±3	I35 30±I,5	9,5 (90)	I50	I0	67-82	–	–	Minus минус 45	I25	24	от минус 30 до плюс 30 plus	–	–	–	–	–	–	–	–	–	I,I6	3	To be shaped, rolled

NOTES: 1. The indices, denoted by X) are not standardized and are specified for setting the date for not less than 25 production layings for establishing the norms.

) набора

2. The Index "Change of relative elongation after ageing in air". For rubber 4326-1 is specified as per set of data for not less than 25 production layings.

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Norms for checking the quality of PT as per - external indications

Nomenclature of PT 1 M

Permissible deviations.	Round sealing ring, rectangular shaped section	Sealing rings and rubber-metallic rubber shaft collars.	Rubber fabric sealing	Protective cover	Rubber gaskets, plugs	Diaphragms blank of diaphragm sheet.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Impression of marks, arising of depression imprints of mold.	P,P* - Not allowed exceeding 0.1 mm. HP - Not allowed exceeding 0.2 mm. if thickness is upto 3.0 mm; exceeding 0.3 mm if thickness is above 3.0 mm. HP* - Not allowed with height (depth) exceeding 0.2 mm at thickness upto 5.0 mm and with height (depth) exceeding 0.3 mm if the thickness is above 5.0 mm.	P,P* - Not allowed HP, HP* - not allowed with depth HP, HP* - Not allowed with depth and height exceeding 0.5 mm.	Not allowed with depth and height exceeding 0.3 mm.	With depth and height exceeding 0.2 mm is not allowed. # - with depth and height exceeding 0.3 mm is not allowed.	Exceeding 0.1 mm if the thickness upto 2.5 mm, exceeding 0.2 mm if the thickness is from 2.5 mm upto8.0 mm, exceeding 0.3 mm if the thickness is above 8.0 mm is not allowed.	With depth exceeding 0.1 mm, with height exceeding 0.2 mm if the thickness is upto 2.0 mm; with depth exceeding 0.1 mm; with depth exceeding 0.1 mm, with height exceeding 0.3 mm if the thickness is above 2.0 mm.
2. Inclusions and traces of fallen inclusions.	Same	Same	P - Not allowed. HP - with depth exceeding 0.3 mm and diameter exceeding 1.0 mm if the thickness is upto 5.0 mm with depth 0.5 mm and with diameter exceeding 1.0 mm if the thickness is above 5.0 mm.	With dimension exceeding 0.3 mm is not allowed. Same.	P,P* - Exceeding 0.2 mm if the thickness is upto 5.0 mm; exceeding 0.3 if the thickness is above 5.0 mm are not allowed. HP, H*- Exceeding 0.3 mm if the thickness is upto 5.0 mm and exceeding 0.5 mm if the thickness is above 5.0 mm are not allowed.	P - Not allowed. HP - with depth exceeding ~~0.1 mm~~ 0.1 mm and diameter exceeding 1.0 mm are not allowed.

- Same -

TY 005-216-75

-70-

Articles made of rubber mould Technique

Table 18

Rubber-metallic and rubber shock-absorber, Rubber inserts for elastics elements, coupling and values. (8)	Vibroinsulating supports (9)	Rubber-metallic and rubber bushes. (10)	Technical plates without fabric gaskets and fabric gaskets and article of them. (11)	Technical plates without fabric gaskets and articles of them (12)	Porous plates and articles of them. (13)	Porous components (14)
Exceeding 0.5 mm is not allowed. For the values it is specified in the drawing.	Exceeding 1.0 is not allowed.	Exceeding 0.5 mm is not allowed.	Exceeding 0.3 mm if the thickness is upto 2.5 mm; exceeding 0.5 mm if the thickness is above 2.5 mm of the total area exceeding 5% are not allowed.	With height and depth exceeding 0.5 mm of the total area exceeding 5% are not allowed.	Exceeding 1.0 mm if the thickness upto 3.0 mm; exceeding 2.0 mm if the thickness is above 3.0 mm are not allowed.	Exceeding 1.0 mm are not allowed.
Exceeding 0.3 mm are not allowed.	with depth exceeding 0.5 mm and diameter exceeding 1.0 mm are not allowed.	With dimensions exceeding 0.3 mm are not allowed.	〃 - Same	With depth exceeding 0.5 mm and diameter exceeding 1.0 mm are not allowed.	Exceeding 1.0 mm if the thickness is upto 3.0; exceeding 2.0 mm if the thickness is above 3.0 mm are not allowed.	With depth exceeding 1.0 mm if the thickness & is 15.0 mm and exceeding 2.0 mm if the thickness is exceeding 15.0 mm are not allowed.

〃 - Same

TY 005-216-75

(1)	(2)	(3)	(4)	(5)	(6)	(7)
3. Moulding flaw, depressions and dents.	P,P* - Not allowed. HP,HP* - With depth, height and radius exceeding 0.3 mm are not allowed.	P,P* - Not allowed. HP, HP* - With height and with depth and radius exceeding 0.3 mm are not allowed.	P - Not allowed. HP, HP* - With area exceeding 0.5 mm with height; depth and radius exceeding 0.5 mm are not allowed.	With dimension exceeding 0.3 mm are not allowed.	Exceeding 0.1 mm if the thickness is upto 2.5 mm; exceeding 0.2 mm if the thickness is from 2.5 upto 8.0 mm; exceeding 0.3 mm if the thickness is above 8.0 mm are not allowed. * - Same	P - Not allowed. HP - Upon agreement between supplier and customer.
4. Difference in the thickness, wall thickness, facet, ovality of holes.	Exceeding half of the field of tolerance are not allowed. * - With-in the tolerances.	Exceeding half of the field of the tolerance are not allowed. * - Within the tolerances.	Exceeding half of the field field of tolerance is not allowed.	Exceeding half of the field of the tolerances are not allowed. * - Within the tolerance.	Exceeding half of the tolerance are not allowed.	Exceeding the half of the field of the tolerances are not allowed.
5. Projecting and drawn in burrs, traces due to the cutting of gate.	Exceeding 0.1 mm if the thickness upto 5.0 mm and exceeding 0.3 mm if the thickness is above.	P, P* - not allowed. HP, HP* - Exceeding 0.2 mm if the thickness is upto 5.0 mm and exceeding 0.5 mm if the thickness is above 5.0 mm are not allowed.	With height exceeding 0.7 mm are not allowed.	With height exceeding 0.5 mm, with depth exceeding 0.2 mm are not allowed. * - Same	Exceeding 0.2 mm if the thickness is upto 3.0 mm; exceeding 0.5 mm if the thickness is above 3.0 mm are not allowed. Exceeding 0.5 are not allowed.	For height exceeding 0.5 mm, with depth 0.1 mm are not allowed.
6. Traces due to cutting with cutting tool and due to grinding.	1. Traces due to cutting with cutting tool exceeding 0.2mm for ring with height upto 3 mm and exceeding 0.3 mm for ring with height exceeding 3 mm are not allowed. Grinding as required for the parting line of the mould within the half of the field of tolerance in the section of ring are allowed. * - Same.	Within the half of the field of tolerance are allowed. * - Same	Traces due to trimming of pressing out or their grinding are allowed.	Grinding as required for the parting line of mould are allowed. * - Same	Within the tolerance are allowed. * - Same	Grinding as required for the parting line of mould are allowed.

Continuation of Table 18

(8)	(9)	(10)	(11)	(12)	(13)	(14)
P - Not allowed. HP - exceeding 0.5 mm if the diameter is exceeding 50 mm are not allowed.	P - Not allowed. HP - exceeding 0.5 mm are not allowed.	Not allowed.	Articles: Inspect gaskets, rubber sheets and HP articles - exceeding 0.5 mm if the thickness is upto 2.5 mm; exceeding 1.0 mm if the thickness is above 2.5 mm.	Along the perimeter of the plate at a distance exceeding 20 mm from the edge are not allowed.	With depth exceeding 2.0 mm and with length exceeding 100 mm, not exceeding 5 damages in number at 1 mm of the plate surface are not allowed.	With Depth exceeding 2.0 mm and radius exceeding 1.0 mm are not allowed.
Within the tolerances.	Within the tolerances.	Within the tolerances.	* - Same. Within the tolerances.	Within the tolerances.	Within the tolerances.	Within the tolerances.
For shock absorbers, with height exceeding 0.5 mm, with depth exceeding 0.3 mm are not allowed. For inserts exceeding 0.5 mm are not allowed.	Burrs are not allowed; With height exceeding 1.0 mm, with depth exceeding 2.0 mm are not allowed. Gate marks with height exceeding 1.0 mm, with depth exceeding 2.0 mm are not allowed.	Along the external diameter with thickness and with height exceeding 0.5 mm are not allowed.				Exceeding 1.0 mm are not allowed.
Within the tolerance are allowed.	Within the tolerance are allowed.	Within the tolerances are allowed.	Within tolerances are allowed. * - Same.	Within the tolerances are allowed.	These are allowed.	These are allowed.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
7. Blunting of uncut edges.	With radius exceeding 0.3 mm are allowed. * - Same	P, P* - Not allowed. HP, HP* - with radius exceeding 0.5 mm are not allowed.	It is allowed	With radius exceeding 0.3 mm is not allowed.	With radius exceeding 0.3 mm is not allowed.	With radius exceeding 0.3 mm is not allowed.
8. Cuts, tears and notches.	They are not allowed. * - Exceeding 0.2 mm if the thickness is upto 5.0 mm and upto 0.5 mm if the thickness is exceeding 5.0 mm.	P, P* - Not allowed. HP - Exceeding 0.3 mm are not allowed. HP - exceeding 0.5 mm are not allowed.	P - It is not allowed. HP- With depth exceeding 0.3mm with length above 10% along the perimeter are not allowed.	Exceeding 0.3 mm if the thickness is upto 3.0 mm exceeding 0.5 mm if the thickness is above 3.0 mm are not allowed.	P - They are not allowed. HP - Exceeding 0.1 mm if the thickness is upto 5.0 mm; exceeding 0.3 mm above 5.0 mm are not allowed. * - Exceeding 0.3 mm if the thickness is upto 5.0 mm and exceeding 0.5 mm if the thickness is above 5.0 mm are allowed.	Exceeding 0.1 mm along the perimeter are not allowed.
9. Air cavities (bare places)	P, P* - Not allowed. HP, HP* - With area exceeding 0.2 mm are not allowed. with depth exceeding 0.2mm are not allowed.	P, P* - They are not allowed. HP, HP* - With area exceeding 0.2 cm^2, with depth exceeding 0.2 mm are not allowed.	-	P, P* - They are not allowed. HP, HP* - They are allowed.	P, P* - They are not allowed. HP, HP* - They are allowed.	They are not allowed.
10. Thickness difference, moire sketches, absence of glass, presence of fading constituents and products due to their interactions, localized embedment dotted burns.	They are allowed. P - Absence of glossy and dotted burns are not allowed.	They are allowed. P - Dotted burns are not allowed.	They are allowed.	They are allowed.	They are allowed.	They are allowed.
11. Uncovering of fittings.	-	Uncovering of fittings at the places of fixing it in the mould.	-	-	-	-

(8)	(9)	(10)	(11)	(12)	(13)	(14)
They are allowed.	They are allowed.	They are allowed.	On the plates it is allowed.	It is allowed on the plates .		With radius exceeding 1.0 mm is not allowed.
Exceeding 0.3 mm are not allowed.	Exceeding 1.0 mm are not allowed.	Exceeding 0.3 mm are not allowed.	Articles : P-Inspect the gaskets of rubber sheets; exceeding 0.3 mm if the thickness is upto 2.5 mm and exceeding 0.5 mm if the thickness is above 2.5 mm are not allowed.	Exceeding 1.0 mm are not allowed.	Exceeding 1.0 mm are not allowed.	With depth exceeding 1.0 mm are not allowed.
They are not allowed.	They are not allowed.	They are not allowed.	With total area exceeding 5% are not allowed.	With total area exceeding 5% are not allowed.	They are allowed.	They are allowed.
Deposit of sulfuh is not allowed.	Upon agreement between supplier and customer they are allowed.	Deposit of sulfuh is not allowed.	They are allowed.	They are allowed.	They are allowed.	They are allowed.
Upon agreement between supplier and customer they are allowed.	Upon agreement between supplier and customer they are allowed.	They are not allowed.	-	-	-	-

(1)	(2)	(3)	(4)	(5)	(6)	(7)
12. Run-over of rubber on the surface of fittings.	-	They are allowed.	-	-	-	
13. Corrugation, buckling.	-	-	P - Not allowed. HP - They are allowed without separation.	-	-	-
14. Surface finish and porosity.	They are not allowed.	They are not allowed.	* - Within the tolerance is allowed. Upon agreement between customer and supplier Surface finish is allowed	They are not allowed.	They are not allowed.	They are not allowed.
15. Imprint of twill.	-	-	They are allowed.	-	-	They are allowed.
16. Traces due to carbon deposit of of rubber in the mould.	P, P* - Not allowed. HP, HP* - They are not allowed.	P, P* - Not allowed. HP, HP* - They are not allowed.	P - Not allowed. HP - Allowed.	They are not allowed.	P, P* HP - Not allowed. HP - Allowed.	They are not allowed.
17. Traces due to glue.	-	At the places of fixing of fixtures in the mould. In the separate valid cases upon agreement between the supplier and customer in other places specified in the drawing also they are allowed.	-	-	-	-
18. Shift of parting line of mould as required.	Within the tolerance on the section. but * - Same not 0,2 mm) - Same -	Within the half of the tolerance * - Same.	Within the tolerance.	Within the tolerance. * - Same.	Within the tolerance. * - Same.	Within the tolerance.

(8)	(9)	(10)	(11)	(12)	(13)	(14)
Upon agreement between the customer and supplier they are allowed.	Thickness exceeding 6.0 mm on the vertical planes of short sides.	Thickness exceeding 1.0 mm on the external surface of the fitting is allowed. On the internal side it is not allowed.	-	-	-	-
-	-	-	-	-	With depth exceeding 2.0mm and length exceeding 100mm exceeding 5 pcs in 1m surface of the sheet.	With depth exceeding 1.0 mm are not allowed
-	-	-	*-Within the tolerance is allowed.	Upon agreement between the customer and supplier surface finish is allowed.	On the face of the sheet they are with depth exceeding 3.0mm with area exceeding 10mm for the sheet with thickness upto 10 mm, depth exceeding 5.0 mm, with area exceeding 10 mm for the sheet with thickness above 10.0 mm.	They are allowed.
-	-	-	-	Neglible traces are allowed.	With exceeding 0.6 mm are not allowed.	-
They are not allowed.	They are allowed.	They are not allowed.	They are allowed.	Neglible traces are allowed.	They are allowed	They are allowed.
For the valves of	They are allowed.	They are allowed.	-	-	They are allowed	They are allowed.
Upon agreement between the customer and supplier, it is allowed for the sheck absorbers. for rubber inserts exceeding 0.5 mm is not allowed.	Exceeding 1.0 mm is not allowed.	Exceeding 0.5 mm is not allowed.	-	-	-	Within the tolerance in the dimension is allowed.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
19. Misalignment of profile of the butt-joint to suit the place. (When placing the blanks in the press-mould.	-	-	-	-	-	-
20. Bubble.	-	-	They are not allowed.	-	-	They are not allowed.
21. Traces of butt-joint.	Without separation they are allowed. * - Same	Without separation they are allowed. * - Same	-	Traces of butt-joint. * - Same	Traces of butt-joint. * - Same	-

NOTE:

1. P - Surface of PTA,M for the quality of which raised requirements. For the rubber and rubber metallic sealing rings, operating surface - surface at a distance not less than 3 mm from the operating edges, beyond the limits 3mm feeler pot of the sealing ring, deviations, specified for non-operating surface (HP), not exceeding along the height and depth 0.1 mm are allowed.
2. HP-Other surfaces of PTA,M
3. * - Relative to PTA,M of rubber on the base of fluorine-containing elastomer.
4. On the sheets, if they are intended for cutting of gaskets, sections with defects, shightly above the requirements for the rubber gasket should be out lined with colour paint. The out lined sections should be subjected to cut.

Continuation of Table 18.

-E-

(8)	(9)	(10)	(11)	(12)	(13)	(14)
-	-	-	-	-	-	Step with depth exceeding 1.0 is not allowed.
-	-	-	With area exceeding 5% are not allowed.	With area exceeding 5% are not allowed.	With area exceeding 10 mm of 15 pcs in the 1.0 m^2 of the surface of the sheet are not allowed.	With area exceeding 30 mm, in this case linear dimension of the deviation not exceeding 1/4 of the dimension of the section having descrepancy.
-	-	-	-	-	They are allowed.	They are allowed.

5. Variation from the shape without changing the section of PT, U, which are subjecting to thermostatic control.

6. Number of permissible variations for one component should not exceed four.

7. Requirements for the external appearance of sealing ring surfaces of round section, except the places of moulding parting line should be in compliance with the requirements for the surface "P".