



QM-C-7.1/Rubber/0011/A
Inspection Plan(Check Sheet)

Item: Injection Moulded Silent Block for Anchor Link of BG Coaches
Specn. : RDSO/2006/CG-15, Rev.0
Amd.: 01of May'2007
Drg. No. & Alt.: CG-K6124, Alt.3, Type-A

1. Name of Manufacturer :
2. Date of Offer :
3. RDSO File No. :
4. Description of material :
5. Drawing and alteration no. :
6. Specification and Grade :
7. P. O. No. :
8. Total Quantity Ordered :
9. Quantity earlier passed :
10. Quantity now offered :
11. Consignee :
12. D. P. :

**Whether Testing Equipment / Measuring Gauges
Due for Calibration**

Yes No

1. Dt. Of Inspection :
2. Qty. accepted :
3. Qty. rejected
4. Balance Order :

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ISUAL & DIMENSIONAL CHECK SHEET

Lot Size : _____ (1000 no. Max.)

a) For Visual Check : Sample Size : _____ (4% specified)

OK/Not ok	
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b) For Dimensional check : Sample Size : _____ (8% specified)

Sl. No.	A (70 ± 0.5)	B (25 – 0.052/- 0.012)	C (36 ±0.1)	D (170 ± 1)	E (100 ± 0.5)	F (90.5+ 0.050/+0 .025)	35 mm	End rubber profile
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COMPRESSIVE LOAD TEST

Process : Compressive Load applied 08 tonnes

Requirement :
1 No Damage to Rubber or Steel
2 Deflection not more than 2 mm
3 No Permanent Set

Lot Size : _____ (1000 nos. Max.) **Sample size** : _____ (1% Specified)

Observations :

Sample No.	Observations		
	Rubber / Steel Condition	Deflection (in mm)	Permanent set
1.			
2.			
3.			
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7.			
8			
9.			
10			

Remark :

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TORSIONAL & CONICAL STIFFNESS

Process : Torsional and Conical stiffness for 8 degree deflection

Requirement : Torque required should be within 8000 to 10000 kg cm
Permanent Set not to exceed 0.5 degree

Lot Size : _____ (1000 nos. Max.) **Sample Size** : _____ (1% specified)

Observed :

Sample No.	Observations			
	Torsional Torque	Permanent Set	Conical Torque	Permanent Set
1.				
2.				
3.				
4.				
5.				
6.				
7.				
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9.				
10.				

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ENDURANCE TEST

Conical Endurance Test Specification :

1. Radial Load : 08 Tonnes
2. Frequency : 10 Cycles / Minutes (Minimum)
3. Cyclic Displacement : 30 mm on either side of central position
4. Total Cycles : 2,50,000 Cycles
5. Sample Size : Specified :- One Every 5000 Nos.

Specified Requirement :

After completion of two fifty thousand cycles there should not be any permanent set and damage to rubber or steel components & rubber metal bond failure.

Observation :

Date	No. of Cycles Run

Remark :

Same material subjected to Torsional Endurance Test

Torsional Endurance Test Specification :

1. Radial Load : 08 Tonnes
2. Frequency : 10 Cycles / Minutes (Minimum)
3. Cyclic Displacement : 30 mm on either side of central position
4. Total Cycles : 2,50,000 Cycles
5. Sample Size : Specified :- One Every 5000 Nos.

Specified Requirement :

After completion of two fifty thousand cycles there should not be any permanent set and damage to rubber or steel components & rubber metal bond failure.

Observation :

Date	No. of Cycles Run

Remark :

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PROPERTIES OF RUBBER

1. Physical Properties of Rubber

A. Before Ageing

For Details of these Values Please see Page 9 & 10

Parameter	Specified	Observed		
		I	II	III
Tensile Strength (min.)	180 Kg/cm ²			
Modulus at 100% Elongation (min.)	40 Kg/cm ²			
Elongation at Break (min.)	300%			
Shore Hardness	80 ± 5			
Compression Set at 70+1/-0°C for 24+0/-2 hrs (Max.)	20%			
Ash Content (Max.)	6%			
Specific Gravity (Max.)	1.20			
Bond Strength	500 psi			

B.

After Ageing

Parameter	Specified	Observed			Percentage Variation		
Change in T.S.	± 20%						
Change in Modulus at 100% Elongation	+20, -0%						
Change in E.B.	± 25%						
Change in Shore Hardness	+7, -0						

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Sample Size 03 Nos

Ash Content :

Sl. No.	Empty Crusible(E)	Crucible + Sample(S)	Crucible + Ash(A)	% Ash = $\frac{A - E}{S - E} \times 100$
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1.

2.

3.

Specific Gravity :

Sl. No.	Weight in Air (W)	Weight in Water (W ₀)	Sp. Gr. = $\frac{W}{W - W_0} \times 100$
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1.

2.

3.

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Sample Size 03 Nos. of sample tested

Hardness (Before ageing)			Hardness (After ageing)			Change in Shore Hardness (after ageing)		
a	b	c	a	b	c	a	b	c

Compressin Set

	Dia. 13.5± 0.5 mm	To Original 6.3+ 0.3 mm	T1 Final mm	Ts Spacer mm	Compression Set = $\frac{To - T1}{To - Ts} \times 100$	Mean
1.						
2.						
3.						

Shear Bond Strength Test

Specified value Min 500 P.S.I. Test conducted as per IS:3400 Part-14,1984

Value Observed _____ PSI

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Sample Size 03 Nos. of sample tested
PHYSICAL PROPERTIES

A. Before Ageing

S.No.	Thickness (2.0±0.2) mm				Width (4± 0.1)	Area	Load In Kgs	T.S. Kg/cm ²	Median	Load at 100%E.B.	Mod. at 100%E.B	Elongation at break			Median
	a	b	c	Avr.								Initial (20±0.1) mm	Final	%E.B.	
1.															
2.															
3.															

B. After Ageing (at 70± 1°C for 72+0/-2 hrs)

S.No.	Thickness (2.0±0.2) mm				Width (4± 0.1)	Area	Load In Kgs	T.S. Kg/cm ²	Median	Load at 100%E.B.	Mod. at 100%E.B	Elongation at break			Median
	a	b	c	Avr.								Initial (20±0.1) mm	Final	%E.B.	
1.															
2.															
3.															

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