



**QM-C-7.1/Rubber/0011/B**  
**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-B

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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. :

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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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### VISUAL & 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 (30 ± 0.1)	C (52 ± 0.5)	D (200 ± 0.5)	E (98 ± 0.5)	F (90.5+ 0.050/- 0.025)	G (25 - 0.0, -0.2)	H (150 ± 0.5)	51 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.			
4.			
5.			
6.			
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.				
8.				
9.				
10.				

**Remark** :

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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 <sup>2</sup>			
Modulus at 100% Elongation (min.)	40 Kg/cm <sup>2</sup>			
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 :**

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

2.

3.

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**Specific Gravity :**

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Sl. No.	Weight in Air (W)	Weight in Water (W <sub>0</sub> )	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)**

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a                      b                      c  
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**Hardness  
(After ageing)**

-----  
a                      b                      c  
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**Change in Shore Hardness  
(after ageing)**

-----  
a                      b                      c  
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**Compression Set**

	Dia. 13.5± 0.5 mm	To Original 6.3± 0.3 mm	T1 Final mm	Ts Spacer mm	Compression Set	$= \frac{T_o - T_1}{T_o - T_s} \times 100$	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 OF RUBBER USED IN SILENT BLOCKS FOR ANCHOR LINK**

**A. Before Ageing**

S.No.	Thickness (2.0±0.2) mm				Width (4± 0.1 mm)	Area	Load In Kgs	T.S. Kg/cm <sup>2</sup>	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 mm)	Area	Load In Kgs	T.S. Kg/cm <sup>2</sup>	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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