



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन

Government of India - Ministry of Railways
RESEARCH DESIGNS & STANDARDS ORGANISATION

DOCUMENT No. TDG 0005, Rev.'0' & 0006 Rev.'0'

ITEM SPECIFIC GUIDELINES
FOR
GLASS FILLED NYLON – 66 INSULATING LINERS
&
HIGH DENSITY POLYETHYLENE DOWELS

Price: Rs. 1100/-.

गुणवत्ता आश्वासन सिविल निदेशालय
अनुसंधान अभिकल्प और मानक संगठन
मानक नगर, लखनऊ -226011

QUALITY ASSURANCE CIVIL DIRECTORATE

**RESEARCH DESIGNS & STANDARDS ORGANISATION
MANAK NAGAR, LUCKNOW – 226011**

A. ITEM SPECIFIC GUIDELINES

In addition to the procedure for vendor approval given in the 'General guidelines for vendor approval' the following specific guidelines shall also be applicable to vendor seeking approval for manufacture of GFN-66 liners & Polyethylene Dowels.

a) GFN-66 liners

1. After successful assessment of firm in accordance with the 'General Guidelines for vendor approval' and approval of inspection gauges the firm will be asked to submit Internal test results of type tests and product testing as per scheme of testing for pre-acceptance test for approval of samples as embodied in the IRS specification for GFN-66 liners IRS.T-44-1995.
2. After the above results are considered acceptable by RDSO, samples for type tests and product testing for approval in RDSO shall be required to be manufactured in the presence of RDSO's representative and these shall be drawn by him. The samples for type tests and product testing shall be drawn in the same go.
 - 2.1 Samples for approval shall be tested in two stages as given below:-
 - i) For type test
 - ii) For product testing.
 - 2.2 The product testing shall be undertaken only if the samples have passed in the 'type tests'. If the samples fail in the type test, samples in product testing shall also be deemed to have failed and fresh samples shall be drawn both for the 'type tests' as well as for the 'product testing'.
 - 2.3 If the samples pass in type tests and fail in product testing fresh samples shall be invited only for the product testing.
 - 2.4 It shall be the firm's responsibility to ensure that 'as moulded' samples/specimen are sealed and guarded against the ingress of moisture. The samples should bear the signature of the RDSO's representative deputed to witness production and to draw the samples and signatures of the representative of the firm.
 - 2.5 The samples will be left in sealed condition with the firm and it shall be the responsibility of firm to deliver the same to RDSO (M&C Dte.) within 15 days from the date of drawal of samples. The samples along with a set of approved gauges shall be sent to RDSO, with a letter addressed to the Director General/M&C RDSO, Lucknow and copy to the Director General/Track, RDSO, Lucknow.
 - 2.6 If the samples are not found satisfactory as per specification in RDSO testing, the firm will be intimated to submit fresh samples for testing as per the procedure described above.
 - 2.7 If firms are already approved for similar component, they may not be required to seek clearance in the 'type tests' again. However, firms will be required to submit the

inspection gauges for approval for the new design of liner above, before drawal of samples of the product for testing and approval in RDSO.

- 2.8 After the approval of samples both in type tests as well as in product testing, the firm will be considered for inclusion in the list of Part-II supplier, for the type of liners developed, as per the criteria laid in the general guidelines for vendor approval.

b) Polyethylene Dowels

1. After successful assessment of firm in accordance with the 'General Guidelines for vendor approval' and approval of inspection gauges the firm will be asked to submit Internal test results of various tests as per scheme of testing for pre-acceptance test for approval of samples as embodied in the IRS specification for Polyethylene Dowels, Provisional-1997.
2. After the above results are considered acceptable by RDSO, samples of dumbbell and product testing for approval in RDSO shall be required to be manufactured in presence of RDSO's representative and these shall be drawn by him.
- 2.1 It shall be the firm's responsibility to ensure that samples are sealed properly. The samples should bear the signature of the RDSO's representative deputed to witness production and to draw the samples and signatures of the representative of the firm.
- 2.2 The samples will be left in sealed condition with the firm and it shall be the responsibility of firm to deliver the same to RDSO (M&C Dte.) within 15 days from the date of drawal of samples. The samples along with a set of approved gauges shall be sent to RDSO, with a letter addressed to the Director General/M&C RDSO, Lucknow and copy to the Director General/Track, RDSO, Lucknow.
- 2.3 Samples for approval shall be tested in RDSO for chemical properties & dimensions as per relevant specification and drawings.
- 2.4 If the samples are not found satisfactory as per specification in RDSO testing, the firm will be intimated to submit fresh samples for testing.
- 2.5 After the approval of samples in testing, the firm will be considered for inclusion in the list of Part-II supplier, for the type of liner developed, as per the criteria laid in the general guidelines for vendor approval.

B. SCHEDULE OF TECHNICAL REQUIREMENTS FOR APPROVAL OF FIRMS TO MANUFACTURE GFN-66 LINERS & POLYETHYLENE DOWELS

1. SCOPE

The schedule of technical requirements covers the norms for manufacture of GFN-66 liners & Polyethylene dowels to be used in permanent way track on Indian Railways.

2. GENERAL & MANUFACTURE FACILITIES

The vendor seeking approval shall comply with all the below mentioned requirements.

- 2.1 Covered area with adequate space for storage of raw material and finished product should be available which is free from dampness and humidity. They should have separate damp free secured bond room with adequate space for accommodating at least 50,000 nos. of such finished product.
- 2.2 De-humidifier / Drying chamber with digital temperature and humidity controller & indicator of suitable capacity for pre-drying of raw material should be available.
- 2.3 Horizontal screw type fully automatic PLC based injection-moulding machine should be available for moulding; preferably 380 gms shot (granules) capacity.
- 2.4 Temperature of hydraulic oil and moulds should be kept controlled by suitable cooling system.
- 2.5 Electrical hoist/manual block & tackle for mounting & dismounting of moulds should be available.
- 2.6 Suitably designed dies & moulds for products (minimum 2 nos. for each size & drawing No.) should be available. Dies/moulds may be of two cavity or multi-cavity, but permission will be given for bulk production as per the cavity number used during approval time.
- 2.7 Annealing tank of suitable capacity with thermostat facility and digital temperature indicator should be available.
- 2.8 For manufacturers seeking approval for dowels should have dies/moulds of at least 2-cavity Vertical type with motorised unscrewing (inside) shank system.
- 2.9 All the moulds/die shall be of hardened steel including the mould for tensile test piece. The manufacturer's insignia, drg. No. and cavity no. shall have permanent engraving while the manufacturing year marking may be of injector-pin type.
- 2.10 Manufacturer seeking approval for dowel should also have an electric heating-compression load type machine for providing slabs for tensile testing test piece preparation.

- 2.11 The manufacturer should have all in-house arrangement for screen printing so that the products treated & finished inside the factory.
- 2.12 De-flashing tools of suitable design in adequate nos. to be available.
- 2.13 Minimum infrastructure for maintenance and polishing of dies & moulds should be available in-house.
- 2.14 Diesel Generator of adequate capacity should be installed to take up the load of the entire plant in case of power failure.

3. TESTING FACILITIES

- 3.1 Ambience in the testing laboratory should be suitably controlled for humidity and temperature with digital indicator facility.
- 3.2 Tensile testing machine with extensometer or suitable measuring arrangement and all provisions in accordance with ASTM-D-638 & ISO-R-527 or testing strength and elongation percentage and speed gear system to suit the different testing speeds for different types/drg. No. should be available. Test fixture for checking cross breaking load should also be available.
- 3.3 Necessary apparatus for testing the melting point and specific gravity in accordance with BS-2782 Part-I & Part-V respectively should exist.
- 3.4 A single pa digital type chemical balance shall be available having capacity to read upto 4th decimal.
- 3.5 Digital vernier callipers and three-point digital bore gauges (Min.2 nos. of each) should be available.
- 3.6 One Rockwell hardness tester having R-scale facility along with standard test block should be available.
- 3.7 One shore 'D' hardness tester along with standard test block should be available for dowels.
- 3.8 One muffle furnace of capacity 0-1000 °C with temperature controller & indicator should be available along with sufficient numbers of desiccators and crucibles for checking glass filler by ash content (%).
- 3.9 Stopwatch with least count reading of 0.1 seconds should be available.
- 3.10 One melt-flow index test apparatus as per ASTM-D-1238 should be available for dowels.
- 3.11 Barometer & hygrometer in the laboratory should be available.

- 3.12 All measuring gauges of the products should be hardened/or chrome plated (tow sets).
- 3.13 One magnifying glass of min 20x for checking surface finish and internal cavity should be available.
- 3.14 For checking calibration of tensile/compression testing machine, preferably one number proving ring of min. 5t capacity duly calibrated by NPL should be available with suitable links for in-house calibration.

QUALITY CONTROL REQUIREMENTS

- 3.15 There should be a system to ensure the traceability of the product from raw material stage to finished product stage. This system should also facilitate to identify the raw material composition from the finish product stage.
- 3.16 Ensure that the system of First-in First-out is followed for raw material and the intermediate stage products.
- 3.17 Ensure that there is a Quality Assurance for the product detailing various aspects
- Organisational Chart
 - Flow process chart
 - Stage inspection details
 - Non conformities in various parameters & control over them

The QAP shall be available as per the requirement details in “General Guidelines for Vendor Approval”.

- 3.18 There should be at least one plastic technologist having a minimum bachelor's degree in relevant field & 5 years experiences or a person with diploma in relevant field with 12 years experience. He should be free from day-to-day production, testing & quality control responsibility. He should be mainly responsible for development and regular production of the product, analysis of products, control over raw material, corrective action in case of difficulties in achieving the parameters.
- 3.19 Ensure that the in-charge of the quality control section is having a qualification of minimum bachelor's degree in the relevant field and have minimum five years experience or a diploma holder with minimum 8 years experience. He should be actively involved in day-to-day activities of quality control / stage inspection / compliance of QAP etc.
- 3.20 The firm should have acquired ISO: 9000 certification and the product for which an approval is sought should be broadly covered in the scope of the certification for manufacture and supply.
- 3.21 The quality manual of the firm for ISO: 9000 should clearly indicate at any stage the control over manufacturing and testing of the said railway product.

- 3.22 Ensure that proper analysis is being done on monthly basis to study the rejection at various internal stages and it is documented.
- 3.23 Ensure that all the relevant drawings, specifications, IS, BS standards, ASTM, ISO and test methods are available with the firm.
- 3.24 It is to be ensured that the dies and moulds are checked for accuracy for various critical predefined dimensions at least on weekly basis or after production of 500 pieces whichever is earlier and observations are recorded. The wear and tear of nozzle and barrels of injection moulding machine should also be checked at least once in a month or after 50,000 nos. production (whichever is earlier) & observation recorded & shall be rectified if warranted by such records.
- 3.25 Training need should be identified for all concerned officials & regular training shall be organised & imparted on maintenance of machine, quality assurance, safety parameters etc. & records maintained.



Research Designs and Standards Organisation,
Ministry of Railways, Lucknow, India

QUALITY ASSURANCE CIVIL DIRECTORATE - RDSO, LUCKNOW

PROFORMA FOR TECHNICAL CAPABILITY ASSESSMENT FOR MANUFACTURE AND SUPPLY OF GFN LINERS DRAWING NO.....

(To be filled in duplicate. Attach extra sheets wherever necessary)

1. SECTION-I : GENERAL INFORMATION (FOR RECORD PURPOSE ONLY)

1.1 Name of the firm:

1.2 Address:

- (a) Head Office
- (b) Works
- (c) Location of worksKm
FromRailway Station.

1.3 Factory Area (Sq.m.)

- (a) Covered
- (b) Uncovered
- (c) Is the factory site in your name or on rental basis?
Support with documents.
- (d) Telephone No.
 - (i) Head Office
 - (ii) Works
- (e) Telegraphic/Telex/Fax/E-mail address
 - (i) Head Office
 - (ii) Works

1.4 SSIC/NSIC Registration No.

1.5 Power Availability (KVA)

- (a) General allotted capacity
- (b) Standby generator and its capacity, if available.
- (c) Diesel Generator of adequate capacity should be installed to take up the load of the entire plant in case of power failure.
- (d) Name the party/person in whose name the power is sanctioned and your agreement with the party/person
(Support with documents)

1.6 Name of any other units located in the above premises:
(As indicated in 1.3)

1.7 Man Power Management :

- (a) Managerial staff
- (b) Shop floor Engineers/Supervisors
(Their Nos. with their qualifications and service experience)
- (c) Laboratory In-charge whether full time or part time. (Indicate their names, qualifications and service

- (d) experience)
Inspection & quality control staff,
(give their name, qualifications and
service experience)
- (e) Workmen
 - (i) Highly skilled
 - (ii) Semi-skilled
 - (iii) Un-skilled.

2. SECTION – II : TECHNICAL INFORMATION
(AVAILABILITY OF PLANT & MACHINERY AS INDICATED BY MANUFACTURER
SHOULD BE PHYSICALLY VERIFIED BY THE ASSESSMENT OFFICIAL)

2.1 Infrastructure for production and production capability

2.1.1 Automatic screw type injection moulding machines:
Indicate their:-

- (a) Their numbers
- (b) Shot capacity of each machine
- (c) Make of the machines
- (d) Age of each machine
- (e) Automatic temperature control
Device -range.

Note: Preferably Horizontal screw type fully automatic PLC based injection-moulding machine should be available for moulding of min.380 gms shot (granules) capacity.

2.1.2 Drying chamber/oven Indicate their

- (a) Number
- (b) Capacity
- (c) Make
- (d) Age
- (e) Automatic temperature control
Device at 80-85 °C range.

Note: Preferably De-humidifier with digital temperature and humidity controller & indicator of suitable capacity for pre-drying of raw material should be available. The Unit shall be of sealed unit type so that granules after preheating is charged into the injection machine automatically by suction awarding and contact with ambient air.

2.1.3 Electrical (Thermostatically controlled annealing baths
capable of heating water upto 100 degree C)

- (a) Nos.
- (b) Size
- (c) Availability of thermostat facility and
digital temperature indicator

2.1.4 Source of raw material

2.1.5 Arrangement for storing of raw material

Note: Covered area with adequate space for storage of raw material and finished product should be available which is free from dampness and humidity.

2.1.6 Tool room cum die making facilities

- (a) Deflashing tools of suitable design in adequate nos. to be available.
- (b) Minimum infrastructure for maintenance and polishing of dies & moulds should be available in-house.

2.1.7 Any other facilities which the firm considers relevant

2.1.8 Rated production capacity per month

2.1.9 Describe arrangement for storing finished product, batchwise to avoid mixing.
Note: Covered area with adequate space for storage of raw material and finished product should be available which is free from dampness and humidity. They should have separate damp free secured bond room with adequate space for accommodating at least 50,000 nos. of such finished product.

2.2 Test Facilities cum quality control steps

2.2.1 Laboratory room

- (a) Size of room
- (b) Air conditioning arrangement for controlling temperature and humidity in the room. (Air conditioning is required)

2.2.2 Laboratory equipment/test facilities
Indicate availability of the following equipment/test facilities.
All equipments should be in working order:-

<u>Test</u>	<u>Requirement</u>	<u>Indicate availability</u>
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2.2.2.1 Test facilities for test method as per tensile strength. ASTM D 638.

Tensile testing machine

- (i) Type
- (ii) Make
- (iii) Age
- (iv) Capacity 2.5 M/T(Min.)
- (v) Operating speed 1.5mm/min., 5.0mm/min., 50mm/min.

2.2.2.2 Test facilities for cross breaking strength
Test method as per IS: 1998-1962

2.2.2.3 Testing facility for Melting point test.
Test Method 1030 of BS: 2782 Pt.I
OR
Capillary method apparatus

2.2.2.4 Specific gravity test
Test method as per BS: 2782 Pt. VI
(i) Single pan chemical balance (Accuracy: 0.1mg)
(ii) Beakers etc.

2.2.2.5 Hardness test
Test method as per ASTM-D-785 (Hardness tester Rockwell)R

2.2.2.6 Facility for check on glass filler by ash(%)
(i) Single pan chemical balance (accuracy : 0.1 mg)
(ii) Muffle furnace temp. 1000 °C
(iii) Desiccators
(iv) Crucibles.

2.2.2.7 Facility for Compression testing

- | | | |
|--|---|---|
| | cross-breaking load test for GFN liners | machine & arrangement as per IRST for liners.
(Attach drawing of test fixture And loading arrangement) |
|--|---|---|
- 2.2.2.8 Facility for compressive load for GFN liners -do-
- 2.2.2.9 Gauge for dimensional Check Minimum two sets as per RDSO drawing
- 2.2.3 In house facility for checking calibration of tensile testing machine Min. 5 t capacity tension/ compression proving ring calibrated by NPL or other Govt. approved test house With suitable fixing links.
- 2.2.4 Periodicity of checking calibration of equipment and agency deployed for checking calibration
- 2.2.5 Do you undertake the raw material identification tests before its use? OR depend upon the supplier's certificate.
- 2.2.6 Staff strength
- (a) Production staff
- (b) Quality assurance :
(Production stage, Lab. Testing)
- (i) Staff for quality monitoring
In production stage
- (ii) Staff for laboratory testing
- 2.2.7 Do you possess the relevant standards (BS, ASTM, BIS / IS) as referred in IRST specification for GFN Liners? Please list these as per availability.
- 2.2.8 Describe (in a separate sheet) the various steps for stage inspections for quality monitoring and control during production. The quality assurance programme (including the proforma for maintenance of records) proposed to be adopted for the product, should be submitted.

3. SECTION-III : EXPERIENCE (FOR RECORDS PURPOSE ONLY)

- 3.1 Indicate various types of items being manufactured in your works and the name of the agency/client for whom it is being manufactured.
- 3.2 Indicate important customers for the last three years both Govt. and non Govt. if any , for information furnished in your reply to 3.1
- 3.3 Indicate details (contract reference, item and quantity manufactured and supplied of important orders executed in the past three years for the following. Indicate the inspecting agency for each.

- (i) Govt. Department, Central, State and Govt. undertaking other than Railway.
 - (ii) Directly to the Railways.
 - (iii) Outside important firms.
- 3.4 Please specify current orders in hand on your firm (Contract reference, client, Item, Quantity under manufacture and supply)
- 3.5 Whether you are already registered with RDSO for other P.Way Items. If so, name the item supported by documents.
- 3.6 Whether you are already registered with RDSO for items other than P.Way items. If so, name the item with which you are registered. Support with documents.
- 3.7 Indicate annual turnover of your company.
- 4. DECLARATION**
- 4.1 We do hereby declare that the above particulars are correct and no discrepancy shall be found during actual investigation before and during execution of order on our firm.
- 4.2 Any change in the plant and machinery and change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval.
- 4.3 We also declare that our concern has not been black listed by Railway, Railway Board / RDSO for business with the Railways.
- 4.4 We hereby undertake that all our equipments for manufacturing and testing as listed above shall be maintained in good working order at all times.

Signature
Date
Name in full of signing
Authority
Status in the firm
Stamp of the firm



Research Designs and Standards Organisation,
Ministry of Railways, Lucknow, India

QUALITY ASSURANCE CIVIL DIRECTORATE - RDSO, LUCKNOW

PROFORMA FOR TECHNICAL CAPABILITY ASSESSMENT FOR MANUFACTURE AND SUPPLY OF POLYETHYLENE DOWELS

(To be filled in duplicate. Attach extra sheets wherever necessary)

1. **SECTION-I: GENERAL INFORMATION** (For record purpose only)
 - 1.1 Name of the firm
 - 1.2 Address
 - a) Head Office
 - b) Works
 - c) Location of worksKm
FromRailway Station.
 - 1.3 Factory Area (Sq.m)
 - (a) Covered
 - (b) Uncovered
 - (c) Is the factory site in your name or on rental basis ?
Support with documents.
 - (d) Telephone No.
 - (i) Head Office
 - (ii) Works
 - (e) Telegraphic address/Telex/Address/FAX address
 - (i) Head Office
 - (ii) Works
 - 1.4 SSIC/NSIC Registration No.
(Enclose Copy)
 - 1.5 Power availability (KVA)
 - (a) General allotted capacity
 - (b) Stand by generator and its capacity, If available.
Diesel generator of adequate capacity should be installed to take up the load of the entire plant
in case of power failure.
 - (c) Name the party/person in whose name
the power is sanctioned and your
agreement with the party/person
(Support with documents)
 - 1.6 Name of any other units located
in the above premises.
 - 1.7 Man Power Management :
 - (b) Managerial staff
 - (b) Shop floor Engineers / Supervisors

- (Their Nos. with their qualifications and service experience)
- (c) Laboratory Incharge whether full time or part time. Indicate their names, qualifications and service experience.
 - (d) Inspection & quality control staff, give their name, qualifications and service experience.
 - (f) Workmen
 - (i) Highly skilled
 - (ii) Semi-skilled
 - (iii) Un-skilled.

2. SECTION - II : TECHNICAL INFORMATION

Indicate the availability of the following against each item para-wise.

2.1 Infrastructure for production

2.1.1 Automatic screw type injection moulding machines with temperature /pressure control arrangements.

- (a) Their numbers
- (b) Shot capacity of each machine
- (c) Make
- (d) Age of each machine
- (e) Automatic temperature control Device with range.

Note: Preferably De-humidifier with digital temperature and humidity controller & indicator of suitable capacity for pre-drying of raw material should be available. The Unit shall be of sealed unit type so that granules after preheating is charged into the injection machine automatically by suction awarding and contact with ambient air. Dies / moulds of at least 2-cavity Vertical type with motorized unscrewing (inside) shank system should be available. An electric heating-compression load type machine for providing slabs for tensile testing test piece preparation should also be available.

2.1.2 Drying chamber / oven with temperature control arrangement

- (a) Their nos.
- (b) Capacity
- (c) Make
- (d) Age
- (e) Automatic temperature control Device.

Note: Preferably De-humidifier with digital temperature and humidity controller & indicator of suitable capacity for pre-drying of raw material should be available. The Unit shall be of sealed unit type so that granules after preheating is charged into the injection machine automatically by suction awarding and contact with ambient air.

2.1.3 Source of raw material

2.1.4 Arrangement for storing of raw material and size of the storage room.

Covered area with adequate space for storage of raw material and finished product should be available which is free from dampness and humidity. They should have separate damp free secured bond room with adequate space for accommodating at least 50,000 nos. of such finished product.

- 2.1.5 Tool room cum die making facilities
- (a) Deflashing tools of suitable design in adequate nos. to be available.
 - (b) Minimum infrastructure for maintenance and polishing of dies & moulds should be available in-house.

2.1.6 Any other facilities which the firm considers relevant

2.1.7 Rated production capacity
Planned per shift

2.1.8 Describe arrangement for storing finished product , batch wise to avoid mixing. Indicate size of storage and inspection room.
Note: Covered area with adequate space for storage of raw material and finished product should be available which is free from dampness and humidity. They should have separate damp free secured bond room with adequate space for accommodating at least 50,000 nos. of such finished product.

2.2 Test Facilities cum quality control steps

2.2.1 Laboratory room

- (a) Size of room
- (b) Air conditioning arrangement for controlling temperature and humidity in the room. (Air –conditioning is required)

2.2.2 Laboratory equipment/test facilities

Indicate availability of the following equipment/test facilities. All equipments should be in working order :

Test	Requirement	Indicate availability with relevant Details wherever necessary
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2.2.2.1	Test facilities for tensile strength	Test method as per ISO-R-527
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Tensile testing machine

- (i) Type
- (ii) Make
- (iii) Age
- (iv) Capacity 2.5 M/T(Min.)
- (v) Operating speed 100 ± 10 mm per min.

2.2.2.2	Test facilities for crystalline melting point	Test method 103c of BS:2782 Pt.I OR Capillary Method
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2.2.2.3	Test facilities for density	(i) Test method as per ASTM-D-792-1966 Method A-1 OR Direct sp.gr. measurement Device (Sp.gr.range 09.2.0)
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- 2.2.2.4 Facility for hardness test (Shore 'D')
- (ii) Beakers etc.
Test method as per ASTM-D-2240 1985
- 2.2.2.5 Facility for checking ash content
- (i) Single pan chemical balance (accuracy : 0.1 mg)
(ii) Muffle furnace temp. 1000 deg.C
(iii) Desiccators
(iv) Crucibles.
- 2.2.2.6 Melt flow index tester
- Test machine as per ASTM-D-1238-1985
- 2.2.2.7 Gauge for dimensional Check
- Minimum two sets as per drawing no. RDSO/T-3545
- 2.2.3 In house facility for checking calibration of tensile testing machine
- Min. 2.5 t capacity tension/compression proving ring calibrated by NPL or other Govt. approved test house With suitable fixing links.
- 2.2.4 Periodicity of checking calibration of equipment and agency deployed for checking calibration
- 2.2.5 Do you undertake the raw material identification tests before its use ? OR depend upon the supplier's certificate
- 2.2.6 Staff strength
- (i) Production staff
(ii) Quality assurance : (Production stage, Lab. Testing)
(iii) Staff for quality monitoring In production stage
(iv) Staff for laboratory testing
- 2.2.7 Do you possess the relevant standards (BS, ASTM, BIS/IS) as referred in IRST specification for dowel ? Please list these as per availability.
- 2.2.8 Describe (in a separate sheet) the various steps for stage inspections for quality monitoring and control during production. The quality assurance programme (including the proforma for maintenance of records) proposed to be adopted for the product, should be submitted.

3. SECTION-III : EXPERIENCE

- 3.1 Indicate various types of items being manufactured in your works and the name of the agency/client for whom it is being manufactured.

- 3.2 Indicate important customers for the last three years both Govt. and non Govt. if any, for information furnished in your reply to 3.1
- 3.3 Indicate details (contract reference, item and quantity manufactured and supplied of important orders executed in the past three years for the following. Indicate the inspecting agency for each.
- (i) Govt. Department, Central, State and Govt. undertaking other than Railway
 - (ii) Directly to the Railways.
 - (iii) Outside important firms.

3.4 Please specify current orders in hand on your firm (Contract reference, client, Item, Quantity under manufacture and supply)

3.5 Whether you are already registered with RDSO for other P.Way Items. If so, name the item supported by documents.

3.6 Whether you are already registered with RDSO for items other than P.Way items. If so, name the item with which you are registered. Support with documents.

3.7 Indicate annual turnover of your company.

4. DECLARATION

- 4.1 We do hereby declare that the above particulars are correct and no discrepancy shall be found during actual investigation before and during execution of order on our firm.
- 4.2 Any change in the plant and machinery and change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval.
- 4.3 We also declare that our concern has not been black listed by Railways / Railway Board / RDSO for business with the Railways.
- 4.4 We hereby undertake that all our equipments for manufacturing and testing as listed above shall be maintained in good working order at all times.

Signature

Name in full of signing
Authority

Place:

Status in the firm

Date:

Stamp of the firm