



BHARAT SANCHAR NIGAM LIMITED

(A GOVT.OF INDIA ENTERPRISE)
QUALITY ASSURANCE AND INSPECTION CIRCLE
II Floor, Sanchar Complex, WMS Compound
Jayanagar 5th Block, 9th Main, 47th Cross, Bengaluru-560041.

TECHNICAL SPECIFICATION EVALUATION CERTIFICATE

No. TSEC/NCR/B/OFC-85170:2024/372.DEC 2025

Date: 11.12.2025

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED BELOW CONFORMS TO TEC SPECIFICATION (GR) No. MENTIONED BELOW AND IS APPROVED FOR PROCUREMENT BY BSNL.THIS CERTIFICATE IS ISSUED SUBJECT TO THE TERMS AND CONDITIONS STIPULATED IN THE ANNEXURE.

PRODUCT : 48F Armoured Optical Fibre Cable for
underground duct application.
(G652D Fibre) (Semi Dry Core)

MODEL No: AKSH/BSNL/G652D/48F
ARM OFC/001

SPECIFICATION NO.:TEC Standard No. : TEC 85170: 2024

SOFTWARE VERSION:
NIL
(IF ANY)

ISSUED ON: 11.12.2025

VALID UP TO : 31.12.2028

ISSUED TO: M/ s Aksh Optifibre Limited,
(Manufacturer) F-1080, Phase-III, RIICO Industrial Area,
Bhiwadi, 301019, Rajasthan.

REMARKS:

- 1) CACT approved Raw Materials as per latest specification only to be used during Bulk Production.
- 2) Cross Sectional Construction as per Annexure-A and details of Raw Material used as per Annexure-B.



AGM (TSA)
O/o CGM (QA & I),BNG



ANNEXURE

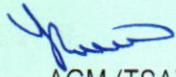
No. TSEC/NCR/B/OFC-85170:2024/372.DEC 2025

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I. TERMS AND CONDITIONS

- i) QA & Inspection Circle, may at any time and at its absolute discretion, for any reason(s) as it deems fit, suspend or cancel the TECHNICAL SPECIFICATION EVALUATION CERTIFICATE (TSEC). QA & INSPECTION CIRCLE may modify any of the terms of the Certificate or specifications, which the holder must at his own expense, may comply with.
- ii) **No modification without necessary permission /approval from QA & INSPECTION CIRCLE is permitted in design (Hardware / Software), Engineering and / or facilities in the approved model subsequent to the issue of this certificate. In case of any modification in the product without permission / approval from QA & INSPECTION CIRCLE, the certificate shall be deemed to have been cancelled and may need fresh certificate.**
- iii) During the validity of certificate, QA & INSPECTION CIRCLE reserves the right to inspect and or test this product at any premises where it is in use, or at the place of manufacturer. If any deterioration in performance of the approved product is noticed during inspection and / or testing or its use in BSNL network, the QA & INSPECTION CIRCLE reserves the right to cancel / suspend the Certificate.
- iv) In case of any dispute at any stage during the validity of this Approval the verdict of the Competent Authority of BSNL QA& INSPECTION CIRCLE shall be final and binding on the manufacturer.
- v) The certificate is valid only up to the date mentioned in the certificate and may be renewed, if required, by applying at least three months prior to the expiry date of this certificate. After expiry of the certificate, the case will be treated as a fresh case.
- vi) **Issue of this Approval does not ensure that the BSNL shall necessarily place order on the manufacturer for this product. It merely qualifies the product for meeting the clauses of the relevant Generic Requirement (GR) Specification. Actual supply of equipment to BSNL shall depend on their procurement policy and procedures.**
- vii) The manufacturer shall use raw material in the manufacturing of Optical Fibre cable from the sources approved during the TSEC. For any change in Source / Raw material, approval/consent of QA & Inspection circle should be obtained. The raw material sources shall be CACT/its authorized agency approved.
- viii) The optical fibre cable may be tested by BSNL/MTNL as per the requirements of the GR, the test schedule of the OF cables & raw Material used by the manufacturer. Any deviation & change of the raw materials used other than the alternate approved sources and /or change in the construction, design of the cable shall require a fresh approval (TSEC).

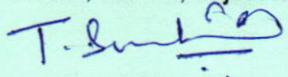
II. Infrastructure Assessment No. CGM (QA&I)/TSEC/NCR B/IA/25-26/147 dated 08.12.2025 valid up to 30.09.2029.


AGM (TSA)
O/o. CGM (QA & I),BNG.

TO,

1. Sr.DDG, TEC, K.L.Bhavan, Janpath, New Delhi.
2. Sr.DDG (TX)/Sr.DDG (SW), BSNL, Statesmen House, Bara Khamba Road, New Delhi.
3. DDG(MM), Statesmen House, Bara Khamba Road, New Delhi.
4. PGM (North), QA & Inspection Circle, New Delhi.
5. DGM (QA), QA & Inspection Circle, New Delhi.
6. DGM (CACT), BSNL QA & Inspection Circle, Bangalore.
7. DGM (CG), BSNL QA & Inspection Circle, Bangalore.
8. Applicant: **M/s Aksh Optifibre Limited, F-1080, Phase-III, RIICO Industrial Area, Bhiwadi, 301019, Rajasthan**
9. Office copy / Guard file




SDE (TSA)
O/o CGM (QA & I) BNG



ANNEXURE-A

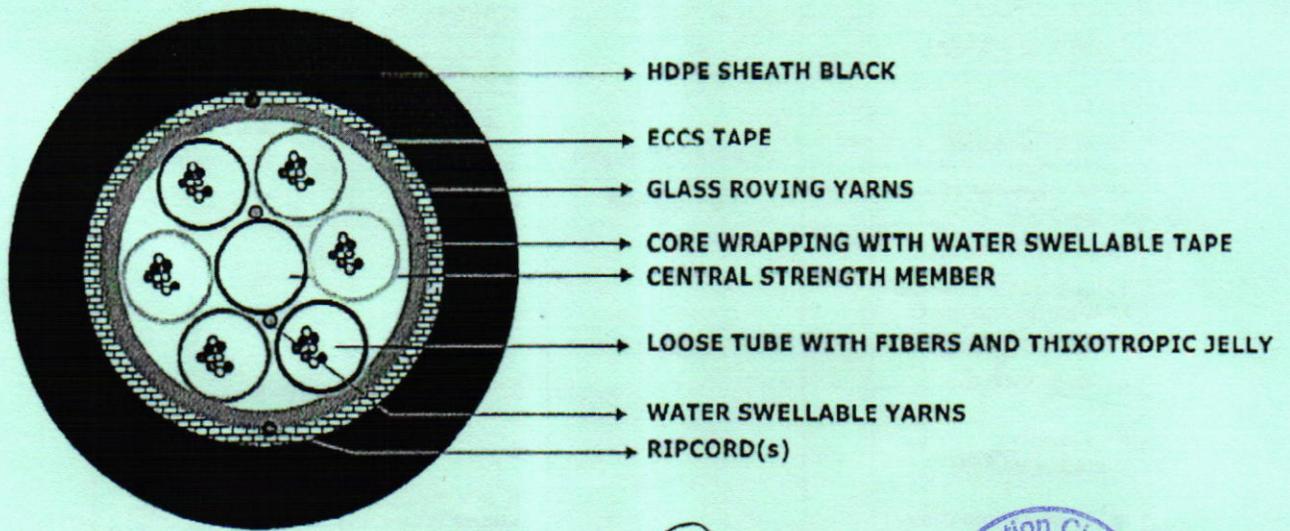
No. TSEC/NCR/B/OFC-85170:2024/372.DEC 2025

Date: 11.12.2025

CROSS-SECTIONAL DIAGRAM OF 48F ARMoured OPTICAL FIBRE CABLE FOR UNDERGROUND DUCT APPLICATION (G652D Fibre) (Semi Dry Core).

MAKE: M/s AKSH OPTIFIBRE LIMITED, BHIWADI
TEC GR NO.: TEC 85170:2024
MODEL NO.: AKSH /BSNL/G652D/48F ARM OFC /001

CROSS SECTIONAL VIEW OF THE CABLE



Abhi
SDE (QA&I)
QA & INSPECTION CIRCLE
GURUGRAM



No. TSEC/NCR/B/OFC-85170:2024/372.DEC 2025

Date: 11.12.2025

Name of manufacturer: M/s. Aksh Optifibre Limited, Dhiwadi
 Product Name: 48F ARMoured OPTICAL FIBRE CABLE FOR UNDERGROUND DUCT APPLICATION (G652D Fibre) (Semi Dry Cure)
 Model No.: AKSH/BSNL/G652D/48F ARM OFC /001

The details of the component parts (Material, Dimensions and quantity etc.) are as below:

S. NO	Component Parts	Qty	Recommended Value	Source / Grade	Measured Value	Remarks
1.	Type of Gingle mode Optical Fibre	-	ITU-T Rec. G 652D SMART LWP SM NAT AKSH MADE	ITU-T Rec. G 652D SMART LWP SM NAT AKSH MADE	ITU-T Rec. G 652D SMART LWP SM NAT AKSH MADE	-
2.	Refractive index of the fibre	-	-	-	1.4670 at 1310 nm & 1.4675 at 1550 nm	-
3.	Number of Fibres in the cable	48	48	-	48	-
4.	No. of Fibre per Loose Tube	6	6	-	6	-
5.	Fibre Colour coding used	-	BLUE, ORANGE, GREEN, BROWN, SLATE & WHITE, RED, NATURAL	-	BLUE, ORANGE, GREEN, BROWN, SLATE & WHITE, RED, NATURAL	-
6.	No of Loose Tubes used	6	6	-	6	-
7.	Colour coding of the Loose Tubes	-	BLUE, ORANGE, GREEN, BROWN, SLATE & WHITE	-	BLUE, ORANGE, GREEN, BROWN, SLATE & WHITE	-
8.	Material of the Loose Tubes	-	-	M/s Radini Plastics India Private Limited, Panchmahal, Dist, Gujarat, ESTOPLAST EP 1115	P.B.T.P.	-
9.	Inner Diameter of Loose Tube	-	≥1.2 mm (Minimum)	-	1.22-1.36 mm	-
10.	Outer Diameter of Loose Tube	-	1.9 ± 0.1 mm	-	1.84-1.98 mm	-
11.	Colour of the Dummy	-	-	-	-	-
12.	Type & No. of Strength Member(s) and their position					
	I. Solid FRP Rod	-	-	I. M/s Aksh Optifibre Ltd., Ringus	Solid E.A.A. Coated FRP Rod in centre	-
	II. Flexible impregnated FRP	-	-	II	-	-
	III. Impregnated Glass Roving	-	-	III. M/s Mangal Chand Tubes Pvt. Ltd Type-D (WB)	M/s Mangal Chand Tubes Pvt. Ltd Type-D (WB)	-
	IV. Aramid Yarn	-	-	IV.	-	-
	V. Metallic	-	-	V	-	-



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Date: 11.12.2025

13.	Size of Strength Member (s)				
	I. Solid FRP Rod	-	2.0 + 0.1 mm/-0.05 mm	-	2.00-2.08 mm
	II. Flexible Impregnated FRP	-	-	-	-
	III. Impregnated Glass Roving	-	5.4 Kg/Km min.	-	5.68 Kg/Km Min
	IV. Aramid Yarn	-	-	-	-
	V. Metallic	-	-	-	-
14.	Type & No. of Rip Cord	2	2 Nos.(6000D)	M/s. Mangalchand Tubos Pvt. Ltd., Jaipur / FIBURE Ripcord	2 Nos. of 3 Ply waxed Rip Cords inside the sheath below armour.
15.	ECCS Tape overlap		10%	M/s. Polycor Associates, Dabhel, Daman.CP-ECCS.	11.62-11.70%
16.	Type of Outer Sheath Material / Colour		H.D.P.E. Black Sheathing (for OF Cables) UV Stabilized	M/s. Sankha Vinyl Pvt. Ltd., Naroli / HDP333 UV	H.D.P.E. Black(UV)
17.	Thickness of Inner Sheath		≥ 1.8 mm		1.82-1.96 mm
18.	Details of Loose Tube Filling Compound		Thixotropic tube filling jelly	M/s ITCO Industries Ltd., Hosur / ITCOGEL 1 250	Thixotropic tube filling jelly
19.	Type of Marking on the cable & colour of the marking		Hot Foil Indentation White		Hot Foil Indentation White
20.	Cable Diameter		11.5 ± 0.5 mm		11.49-11.70 mm
21.	Cable Weight		125 ± 10% Kg / Km		125.36-126.88 Kg/Km




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