

# CTSF – DOUBLE JACKET SINGLE ARMOR (DRY)

## DESIGN AND TEST CRITERIA

Optical fibres are housed in loose tubes that are made of high-modulus plastic and filled without any waterproof compounds except water block yarns, and there is no any jelly in the cable core, so the cable is totally dry type and different from those semi-dry cables. FRP is applied as central strength member. PP loose tubes are SZ stranded around the central strength member. Dry water blocking material is used in and over the cable core to prevent it from water ingress. PSP is lapped over the cable core as a layer of armour. Polyethylene sheath are applied as outer sheath. Two ripcords for easy removal of jacket.

- ITU-T G.652D Characteristics of a single-mode optical fiber
- IEC 60794-1-1 Optical fiber cables- part1-1-Generic specification-General
- IEC 60794-1-2 Optical fiber cables- part1-2-Generic specification-Basic optical cable test procedure
- IEC 60794-3 Optical fiber cables- part3-Sectional specification- Outdoor cables
- IEC 60794-3-10 Optical fibre cables-part 3-10: Outdoor cables-Family specification for duct and
- IEC 60794-3-11 Optical fibre cables-part 3-11: Outdoor cables-Detailed specification for duct and

## Overview

Connect Fiber's Double Jacket Single Armor (DJSA) Technology features an inner & outer sheath and a steel tape armor making the cable suitable for installation in duct, buried and aerial applications. The cable is constructed with a unique second coating and stranding technology provide the fibres with enough space and bending endurance which improves cable handling and reduces the installation time while lowering risk of cable and fiber damage. The manufacturing processes utilized high quality raw materials that guarantee the cable to be able to withstand the typical service condition for a period of twenty-five (25) years without detriment to the operation characteristics of the cable.

## Features

- ITU-T G.652.D rated fiber with improved attenuation and bend performance as well as compatibility with standard single-mode.
- The unique second coating and stranding technology provide the fibres with enough space and bending endurance.
- Gel-Free water blocking design simplifies access, saves time and avoids environmental pollution, small diameter and light weight extend installation length.
- High quality raw material guarantees long service life of cable.

## Ordering Information

Fiber Count	Part Number	Description
432	CTSF-432-STR-DJSA-DRY	432 Fiber Stranded Tube Ribbon 26.0mm, Black PE UV Resistant Jacket, 250um Single Mode, G.652D

## Standards

### CABLE DESCRIPTION

- G.652D SM-fibers: 432
- Loose tubes SZ-stranded.
- Suitable for direct buried, duct or aerial installation.

### WORKING CONDITIONS

- Operation temperature: -40 °C to 70 °C
- Installation temperature: -10 °C to 70 °C
- Storage temperature: -40 °C to 70 °C

### MINIMUM ALLOWABLE BENDING RADIUS

- Static: 10D (D: is the out diameter of the cable)
- Dynamic: 20D (D: is the out diameter of the cable)

**C O N N E C T**

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### Specifications

Optical properties of the SM fiber are achieved through a germanium doped silica based core with a pure silica cladding which meets ITU-T G652D, UV curable acrylate protective coating is applied over the glass cladding to provide the necessary maximum fiber lifetime. Geometrical, optical, and mechanical characteristics of fiber in cable as the following table:

Category	Description	Specification	
		Before cable	After cable
<b>Geometrical Characteristics</b>	Cladding diameter	125.0 ± 1 μm	
	Cladding non-circularity	≤1.0 %	
	Core concentricity error	≤ 0.6μm	
	Coating diameter	245± 7 μm (Before Color Coating) 250± 15 μm (Colored)	
	Coating/cladding concentricity error	≤12.0 μm	
<b>Optical Characteristics</b>	Mode field diameter at 1310 nm	9.1 ± 0.4 μm	
	Mode field diameter at 1550 nm	10.4 ± 0.5 μm	
	Attenuation at 1310 nm	≤0.34 dB/km	≤ 0.36 dB/km
	Attenuation at 1383 nm	≤0.34 dB/km	≤ 0.36 dB/km
	Attenuation at 1550 nm	≤ 0.20 dB/km	≤ 0.22 dB/km
	Attenuation at 1625 nm	≤ 0.24 dB/km	≤ 0.25 dB/km
	Zero dispersion wavelength	1300 – 1324 nm	
	Zero dispersion slope	≤ 0.091 ps/(nm <sup>2</sup> ·km)	
	Cable cut-off wavelength	≤ 1260 nm	
	Polarization mode dispersion design link value (M=20, Q=0.01%)	Individual Fiber: ≤ 0.15 ps/√km Design Link Value (M=20, Q=0.01%): ≤ 0.1 ps/√km	
Bending loss (100 turns, 50mm radius, 1310/1550nm)	≤ 0.05 dB		
<b>Mechanical Specification</b>	Tensile performance(N)	4450	
	Crush(N/100mm)	2200	

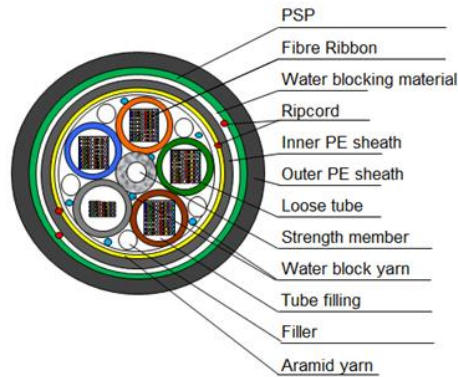
### DIMENSIONS AND DESCRIPTIONS OF CABLE CONSTRUCTION

Item	Details	Fiber Count
		432F
Loose tube	Number	5
	Outer diameter (mm)	6.4
Fiber counts per tube (G652D)		12 Fibers
Max. Fiber counts per tube (G652D)		96(12Ribbons*8)
Cable diameter (approx.)		26.0
Cable weight(kg/km) Approx.		500
Central Strength member	Material	FRP
	Diameter (mm)	3.7
	PE layer diameter (mm)	4.5
Water Blocking Material		Water Blocking Tape & Yarn
Additional strength member	Material	Aramid yarn
Inner Sheath	Material	MDPE
	Color	Black
	Thickness (mm)	Nominal: 1.0
Steel tape	Polymer thickness (mm)	Nominal: 0.05
	Thickness (mm)	Nominal: 0.15
Outer Sheath	Material	MDPE
	Color	Black
	Thickness (mm)	Minimum: 2.0
Ripcord	Number	4

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## Cable Construction

### CROSS SECTION VIEW



## Colour Coding of the Fiber Jackets

### INDIVIDUAL FIBER JACKETS

Each individual fiber can be identifiable throughout the length of the cable in accordance with the following colour sequence. Fiber colour in each tube starts from Fiber #1 which is Blue. Fibers counts 13 to 24 all have the black ring with the exception of fiber #20 which is a natural colour.

Fiber jacket colour coding	1	2	3	4	5	6
	Blue	Orange	Green	Brown	Slate	White
	7	8	9	10	11	12
	Red	Black	Yellow	Purple	Pink	Aqua