

BASKET SPREADER 740

YSLTOE • SALT-FOG RESISTANT HOISTING CONTROL CABLE

High-Flexibility PUR 11YM1 Multi-Core Cable for Container Spreader Bar & Port Crane Hoisting Systems

Flexible Cu Class 6 • Aramide Yarn Core (10 kN) • Marine-Duty • 20+ Year Salt-Fog Life

⚡ 300/500V AC

🌫️ Salt-Fog: 3000+ hrs ASTM B117

🚢 Port Crane • Spreader Bar • STS / RTG

📐 15 × D Bending Radius

⬆️ 50 m Max Suspension

FC-TDS-SPR740-YSLTOE-2026-M3P9

Rev. A | May 2026

🚢 PORT & MARINE — Container Terminal • STS Crane • RTG Crane • Spreader Bar • Basket Hoisting

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IEC 60502-1

300 / 500V

PUR 11YM1 MARINE

3000+ HRS ASTM B117

IEC 60228 CL. 6

ARAMIDE CORE 10 KN

15 × D FLEX

160 M/MIN

DIN VDE 0282

-20°C ~ +60°C

14 CONFIGURATIONS

FC-TDS-SPR740-YSLTOE-2026-M3P9

1 PRODUCT OVERVIEW & WHY SALT-FOG RESISTANCE IS CRITICAL

MARINE DUTY • PORT ENVIRONMENT

The **FeiChun BASKET SPREADER 740 (YSLTOE)** is a premium 300/500V multi-core hoisting and control cable engineered for container spreader bar systems, port crane hoisting and basket lift applications. Its defining feature is the **PUR 11YM1 outer sheath** — a marine-optimised polyurethane formulation validated to 3,000+ hours in ASTM B117 salt-fog exposure, delivering 20–25 years of service life where standard PVC cables fail in 5–7 years.

Port terminals expose cables to chloride salt aerosol, 80–100% sustained humidity, intense UV radiation, daily thermal cycling and SO₂/NH₃ atmospheric pollutants. The BASKET SPREADER 740 addresses every one of these failure modes through advanced material selection: **Class 6 copper** for maximum flexibility, **PVC YI2 insulation** with marine-duty hydrophobic additives, a **aramide yarn central unit** providing 10 kN mechanical backup, and **PUR 11YM1 sheath** blocking salt, moisture and UV.

🌫️ SALT-FOG RESISTANCE — WHY PUR?

MATERIAL	ASTM B117 LIFE	MARINE LIFESPAN
PVC (standard)	500–1000 hrs	5–7 years
NBR Rubber	800–1500 hrs	6–9 years
PUR 11YM1 ✓	3 000+ hrs	20–25 years

NACE SP0302-2020: Port equipment in marine salt-fog environments degrades 5–8× faster than inland sites. PUR-based cables reduce lifecycle costs by 40–60% vs. standard cable replacement schedules.

2 KEY OPERATING PARAMETERS

QUICK REFERENCE

VOLTAGE	BENDING RADIUS	MAX SUSPENSION	MAX SPEED	SALT-FOG VALIDATED	ARAMIDE LOAD
300/500 V AC (Uo/U) Test: 2 kV · 1 min	15 × D High-flex design Class 6 Cu stranding	50 m Vertical draping Aramide core	160 m/min hoisting Optimised for fatigue life	3 000+ hrs ASTM B117 PUR 11YM1 sheath	10 kN Min. tensile backup Emergency descent

3 CABLE CONSTRUCTION — LAYER BY LAYER

PUR 11YM1 • ARAMIDE CORE • CLASS 6 CU



Cross-section schematic (representative, not to scale)

- Flexible Red Copper Conductors — Class 6 (IEC 60228)**
Fine-wire stranded (42–84 wires per core); superior mechanical damping and lateral flexibility without stress concentration. DC resistance per IEC 60228.
- PVC Insulation — Type YI2 (IEC 60811)**
Flame-retardant, self-extinguishing (DIN VDE 0482-265-2-1). Hydrophobic silica additives prevent salt-induced surface tracking. Dielectric strength 18–20 kV/mm. Test voltage: 2 kV/1 min.
- Core Identification — Numbered cores, EN 50334 colour sequence**
Black cores with white numbering. Colour sequence: Brown, Blue, Black, Grey, White, Yellow, Green, Orange, Pink, Red, Purple, Turquoise.
- Non-Woven Tape Wrapping — Individual + Overall**
Applied to each conductor bundle and overall assembly. Distributes bending stress evenly, preventing micro-fractures in insulation during repeated pulley cycling.
- Aramide Yarn Central Unit — 10 kN Mechanical Backup**
Para-aramid fibres (Kevlar-equivalent), ISO 13375. Tensile strength 3,600–4,100 MPa. Central positioning allows cable to flex without becoming a stress concentration point.
- PUR Outer Sheath — Type 11YM1 (DIN 73377) — Dark/Black**
Marine-optimised polyurethane. 3,000+ hrs ASTM B117. Cross-linked structure blocks chloride penetration. HALS + benzotriazole UV stabilisers. <0.5% moisture absorption vs. 2–3% PVC.

COMPONENT / LAYER	MATERIAL / SPECIFICATION	KEY PROPERTY	PORT ENVIRONMENT FUNCTION
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Conductor	Flexible red copper, IEC 60228 Class 6	Class 6 – Max flex	Fine-wire stranding (42–84 wires/core); 10M+ bending cycles without microfracture
Insulation	PVC type YI2 (IEC 60811)	2 kV test voltage	Hydrophobic additives block salt tracking; self-extinguishing per IEC 60332-1-2
Non-woven tape wrapping	Synthetic non-woven tape	Stress distribution	Prevents localised micro-fractures during repeated pulley bending
Central unit	Aramide yarn — para-aramid, ISO 13375	10 kN tensile min.	Emergency mechanical backup; prevents cable collapse if primary rope fails
Outer sheath	PUR type 11YM1 (DIN 73377)	3 000+ hrs ASTM B117	Salt-fog barrier; UV/ozone stable; <0.5% moisture absorption; 20+ year marine life

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ELECTRICAL PARAMETERS

IEC 60502-1 · DIN VDE 0282

VOLTAGE & INSULATION			THERMAL RATINGS		
Rated voltage Uo/U	300 / 500 V	IEC 60502-1 · DIN VDE 0282	Max. conductor temp. (service)	+70°C	Continuous operation at +60°C ambient + solar heating
Max. operating voltage	500 V AC	—	Max. conductor temp. (short-circuit)	+150°C	< 5 seconds; insulation integrity maintained
Test voltage (1 min)	2 kV AC	4× max. operating voltage	Operating temp. (fixed)	−20°C to +60°C	Covers tropical & temperate ports
Dielectric strength	18–20 kV/mm	PVC YI2 compound	Operating temp. (flexible)	−20°C to +60°C	No brittle cracking at −20°C
Leakage current (wet)	< 1 mA at 500V	Marine-duty hydrophobic additive	Aramide unit temperature range	−40°C to +150°C	Broader than PVC insulation; performance maintained in extremes
Flame retardance	IEC 60332-1-2	Self-extinguishing; DIN VDE 0482			

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⚡ MECHANICAL & DYNAMIC PARAMETERS — HOISTING PERFORMANCE

15×D · 160 M/MIN · 50 M SUSPENSION

PARAMETER	VALUE	UNIT	ENGINEERING BASIS
► FLEXIBILITY & BENDING			
Minimum bending radius	15 × D		Class 6 fine-wire stranding + non-woven tape + aramide integration
vs. Standard multi-core PVC	20–25 × D (standard)		BASKET SPREADER 740 achieves 33–40% tighter bending radius
Flex cycles to fatigue	> 10 million		At 160 m/min with 2 pulley redirections; 20+ year port duty cycle
► HOISTING SPEED & TENSILE			
Maximum hoisting speed	160 m/min		Optimised balance of fatigue life, thermal management and tensile stress
Maximum tensile strength	15 N/mm²		Measured on conductor cross-section; DIN VDE 0298-3
Maximum torsion	±25°/m		Twist tolerance per metre of cable length
► VERTICAL SUSPENSION (ARAMIDE CORE)			
Maximum suspension length	50 m		Vertical draping from crane hook to spreader frame (with safety margin)
Aramide central unit tensile capacity	≥ 10 kN		Para-aramid fibres ISO 13375; tensile strength 3,600–4,100 MPa per yarn bundle
Emergency descent function	Fail-safe window		If primary rope fails: aramide prevents catastrophic cable drop; allows controlled lowering (ISO 4308-1 philosophy)
► PUR SHEATH MECHANICAL PROPERTIES			
Moisture absorption (PUR vs. PVC)	< 0.5%		vs. 2–3% for PVC; hydrophobic cross-linked network blocks chloride ion penetration
ASTM B117 salt-fog validation	3 000+ hrs		PUR 11YM1; 3–4× better than PVC (500–1,000 hrs); ASTM D1149 Cat A ozone

			resistance
Expected marine service life	20–25 years		Per NACE TM0175-2021 equivalent exposure testing

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// Suspension weight check – 12G×2.5 configuration (834 kg/km = 0.834 kg/m)
Cable self-weight @ 50 m = 50 m × 0.834 kg/m = 41.7 kg = 409 N
Aramide tensile capacity = 10 000 N → Safety factor = 10 000 ÷ 409 = 24.4× at 50 m ✓

// Bending radius example – 36G×2.5 mm², Ø = 36.2 mm
Pulley radius min. = 15 × 36.2 mm ÷ 2 = 271.5 mm (radius) → Use pulley Ø ≥ 543 mm
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⚠ **Hoisting Speed Advisory:** The 160 m/min rating balances three constraints simultaneously — mechanical fatigue (10M+ flex cycles at this speed), electrical heating (I²R at 40–80A nominal), and tensile acceleration forces. Exceeding 160 m/min halves fatigue life and requires upgraded attachment hardware. For high-speed festoon applications (> 240 m/min), see FeiChun Rheyfestoon® equivalent series.

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COMPARATIVE ANALYSIS VS. STANDARD PORT CABLE TYPES
LIFECYCLE COST · TECHNICAL PERFORMANCE

PARAMETER	STANDARD PVC MULTI-CORE	NEOPRENE FESTOON CABLE	BASKET SPREADER 740 ✓	WIRE ROPE + SEPARATE CONTROL
Outer material	PVC — no marine additive	Neoprene rubber	PUR 11YM1 marine-optimised	Galv. steel + PE sleeve
Salt-fog lifespan	5–7 years	6–8 years	20–25 years	10–15 years
Min. bending radius	20–25 × D	12–15 × D	15 × D ✓	30–40 × D
Max. speed	100–120 m/min	240–500 m/min	160 m/min ✓	60–100 m/min
Mech. load backup	None	None	10 kN aramide ✓	Wire rope only
Temperature range	–10°C ~ +50°C	–20°C ~ +60°C	–20°C ~ +60°C ✓	–20°C ~ +60°C
Maintenance cycle	Every 3–4 years	Every 4–5 years	20+ years ✓	Rope: annual
20-year total cost*	~USD 62,100	~USD 45,000	~USD 13,200 ✓	~USD 70,000+

*Per single spreader bar control circuit. See lifecycle analysis below.

20-YEAR LIFECYCLE COST ANALYSIS — SINGLE SPREADER BAR CIRCUIT

✗ STANDARD MULTI-CORE PVC CABLE

Initial installation: ~USD 2,500
Replacement cycles (4×): 4 × USD 2,500 = **USD 10,000**
Installation labour (4× × 16 hrs × USD 150/hr): **USD 9,600**
Downtime cost (4× × 2 days × USD 5,000/day): **USD 40,000**

Total 20-year cost: **USD 62,100**

✓ BASKET SPREADER 740 (YSLTOE)

Initial installation: ~USD 5,800 (premium + engineering)
Replacement cycles (0–1×): negligible
Installation labour (initial only): **USD 2,400**
Downtime cost (inspection only): **USD 5,000**

Total 20-year cost: **USD 13,200 (saving: USD 48,900 / 78%)**

Terminal-Scale Savings: For a container terminal operating 8–12 spreader bar cranes, switching to BASKET SPREADER 740 represents lifecycle savings exceeding **USD 400,000** over equipment lifetime — plus reduced unplanned downtime risk.

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COMPLETE SKU PORTFOLIO — 14 STANDARD CONFIGURATIONS
2.5 MM² (AWG 14) & 3.5 MM² (AWG 12)

2.5 MM² SERIES (AWG 14) — STANDARD SOLENOID / CONTROL APPLICATIONS

FEICHUN PART NO.	CORES × MM²	OD (MM)	CU WEIGHT (KG/KM)	TOTAL WEIGHT (KG/KM)	MAX SUSPEND @ 50 M	TYPICAL APPLICATION
03150D70121M25	12 × 2.5	22.9	288	834	41.7 kg ✓	Small spreader, 4–6 control points
03150D70241M25	24 × 2.5	30.0	576	1 650	82.5 kg ✓	Standard 20ft spreader
03150D70301M25	30 × 2.5	32.6	720	2 050	102.5 kg ✓	30ft spreader, moderate loads

03150D70361M25	36 × 2.5 ★	36.2	864	2 350	117.5 kg ✓	40ft spreader, standard — most common selection
03150D70421M25	42 × 2.5	38.5	1 008	3 050	152.5 kg ✓	40ft spreader with extra circuits
03150D70481M25	48 × 2.5	42.5	1 152	3 450	172.5 kg ✓	Dual spreader / high-current operations
03150D70541M25	54 × 2.5	47.0	1 296	3 490	174.5 kg ✓	Heavy-duty spreader systems

3.5 MM² SERIES (AWG 12) — HEAVY-DUTY / LONG CABLE RUN / HIGH-CURRENT APPLICATIONS

FEICHUN PART NO.	CORES × MM²	OD (MM)	CU WEIGHT (KG/KM)	TOTAL WEIGHT (KG/KM)	MAX SUSPEND @ 50 M	TYPICAL APPLICATION
03150D70201M35	20 × 3.5	32.3	672	2 000	100.0 kg ✓	Higher amperage, shorter cable runs
03150D70241M35	24 × 3.5	32.5	806	2 080	104.0 kg ✓	Standard 20ft spreader, high-current
03150D70301M35	30 × 3.5	36.6	1 008	2 650	132.5 kg ✓	30ft spreader, higher power budget
03150D70361M35	36 × 3.5	39.5	1 210	3 300	165.0 kg ✓	40ft spreader, high current (90+ A per core)
03150D70481M35	48 × 3.5 ★	44.1	1 613	4 150	207.5 kg ✓	Dual-spreader tandem lift — recommended
03150D70421M35	42 × 3.5	41.2	1 411	3 800	190.0 kg ✓	40ft + auxiliary circuits
03150D70541M35	54 × 3.5	44.3	1 814	4 430	221.5 kg ✓	Heavy-duty multi-spreader systems

CONDUCTOR SELECTION GUIDE: 2.5 MM² VS. 3.5 MM²

2.5 mm² (AWG 14): Standard solenoids (15–20 A draw). ~60–70 A capacity per core. Lighter, smaller OD — preferred where cable routing is critical and spare circuit capacity is not a priority. Most common selection for single 20–40ft spreader systems.

3.5 mm² (AWG 12): Heavy-duty solenoids or systems with long cable runs where voltage drop margin is critical (I²R × L). ~90–100 A capacity per core. Recommended for future-proofing and long-run installations where rerouting is difficult or costly.

8 STANDARDS, CERTIFICATIONS & ORDERING INFORMATION

APPLICABLE STANDARDS		ORDERING INFORMATION	
Primary cable standard	IEC 60502-1 · DIN VDE 0282	Product family name	BASKET SPREADER 740 (YSLTOE)
Conductor	IEC 60228 Class 6 · DIN VDE 0295	Standard configurations	14 SKUs — 12 to 54 cores × 2.5 or 3.5 mm²
Core identification	EN 50334 · DIN VDE 0293	Standard reel length	100 m / 200 m / 500 m (specify at order)
Flame retardance	IEC 60332-1-2 · DIN VDE 0482-265-2-1	Min. order quantity	50 m (custom lengths available)
Mech. redundancy	ISO 4308-1 (aramide design philosophy)	Lead time (ex-factory Hefei)	15–30 working days
Salt-fog test	ASTM B117 (3000+ hrs validated)	Delivery terms	FOB Shanghai / CFR / CIF on request
Ozone resistance	ASTM D1149 Category A	Export markets	ZA · KR · AU · SG · MY · QA · AE · US · EU
Marine corrosion	NACE SP0302-2020 · NACE TM0175-2021	Price saving vs. OEM	40–55% below European OEM pricing FOB
Optional approvals	UL/CSA · GOST-R · CE (available on request)		

⚠ PROPRIETARY NOTICE: BASKET SPREADER 740 (YSLTOE) is a proprietary cable design manufactured exclusively by Anhui FeiChun Special Cable Co., Ltd. All technical data including PUR 11YM1 sheath formulations, aramide yarn central unit design (10 kN), Class 6 stranding architecture (15×D), salt-fog validation data (ASTM B117 3000+ hrs) and

FEICHUN CABLES