ABB

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APPLICATION PROFILE

Non-metallic solutions
T&B Liquidtight Systems®

ABB offers non-metallic cable protection solutions for numerous applications and requirements. Customers can find exactly what they need in this portfolio that consists of long-lasting and high-performing products suitable for a variety of environments.

T&B Liquidtight Systems®

Carflex®

PMA®

Introduction
ABB provides one of the widest ranges of non-metallic cable protection solutions. With feature-rich products across several brands, there is a solution for any demanding environment.

Typical applications
For use in indoor or outdoor installations:
- Machine tools
- Food and beverage equipment
- Pharmaceutical equipment
- Robotics
- Solar collection
- Wind turbines
- Rolling stock
- Rail infrastructure
- Heavy vehicle
- Automation and controls
- Construction equipment
- Telecommunications
- Marine
- Medical equipment
- Lighting, signaling and security

Non-metallic solutions
Careful material selection and testing is key to providing a reliable cable protection system that meets the highest performance and appropriate standards.

Non-metallic system components
- Flexible non-metallic conduits
- Flexible non-metallic tubing
- Liquid-tight fittings (metallic and non-metallic)

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Non-metallic solutions

Type A product overview

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Flexible non-metallic reinforced conduit

T&B Liquidtight Systems®

Product line	Type A food and beverage	Type A general purpose
Approvals and certifications		
UL 1660	Yes	Yes
CSA 22.2 No. 227.2 Type A	Yes	Yes
CE certification, IEC/EN 61386	No	No
RoHS	Yes	Yes
NSF	Yes	No
Trade sizes		
UL (Inches)	½ to 2	⅜ to 2
CSA (mm)	16 to 53	12 to 53
BS EN (mm)	20 to 63	16 to 63
Materials		
Core	PVC with nylon braid	PVC with nylon braid
Extruded jacket (UL ID/OD)	PVC	PVC
Colors	Blue	Orange
Documentation		
Technical data sheet	TDS000700	TDS000630

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Liquid-tight fittings

T&B Liquidtight Systems®

Product line	Series 6300SST	Series 6300	Series 3700
Approvals and certifications			
UL 514B	Yes	Yes	Yes
CSA C22.2, No. 18.3	No	No	No
CE certification, IEC/EN 61386	No	No	No
RoHS	No	Yes	No
Halogen-free	No	No	No
Product range			
Trade sizes (inches)	½ to 1¼	½ to 1¼	½ to 2
Orientation	Straight	Straight and 90˚ elbow	Straight, 45˚ and 90˚ elbows
Thread	NPT	NPT	NPT
Materials			
Metal components	Stainless steel 304	Steel locknut	Steel/malleable Iron
Seals and gaskets	Santoprene	Neoprene	Santoprene
Color	Metallic	T&B blue	Metallic
Ingress ratings			
UL 50E	–	–	–
NEMA 250	4, 4X, 12	4, 4X, 12	4, 12
IEC 60529	IP66, IP69	IP66, IP69	IP66
Documentation			
Technical data sheet	TDS000628	TDS000592	TDS000629

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Non-metallic solutions

Type A key features

• Steel, stainless steel and non-metallic fittings
• Straight, 45° and 90° elbow fittings
• Reinforced heavy-duty non-metallic conduits
• ⅜ to 2" trade sizes
• General purpose and food and bev solutions
• Excellent corrosion protection
• Superior and reliable ingress protection
• UL listed

T&B Liquidtight Systems®

Type B key features

• Lightweight, durable and easy installation
• Wide range of steel and non-metallic fittings
• Straight, 45° and 90° elbow fittings
• Extra-flexible non-metallic conduits
• ⅜ to 2" trade sizes
• General purpose solutions
• Excellent corrosion protection
• UL listed

Carflex®

Type C key features

• Safe, reliable system that's easy to install
• Excellent, long-life performance
• 25 conduit types to meet specific applications
• Nylon and metallic thread fittings
• Straight, 45° and 90° elbow fittings
• ¼ to 5" trade sizes
• Ingress protection conforming to recognized test methods
• High impact strength at low temperatures
• UL listed and UL recognized

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Non-metallic solutions

Type B product overview

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Flexible non-metallic conduits and tubing

	T&B Liquidtight Systems®		**Carflex®**	
Product line	LTC — XTRA FLEX®	EFC NM tubing	15100 X-flex tubing	15000 NM conduit
Approvals and certifications				
UL 1660, 1696	Yes	Yes	Yes	Yes
CSA C22.2, No. 56	Yes	Yes	Yes	Yes
CE certification, IEC/EN 61386	No	No	No	No
RoHS	No	No	No	No
Halogen-free	No	No	No	No
Trade sizes				
UL (inches)	⅜ to 2	¼ to 2	⅜ to 2	⅜ to 2
CSA (mm)	12 to 53	12 to 53	12 to 53	12 to 53
BS EN (mm)	16 to 63	16 to 63	16 to 63	16 to 63
Materials				
Core	PVC	PVC	PVC	PVC
Extruded jacket (UL ID/OD)	PVC	PVC	PVC	PVC
Colors	Black, gray, orange and blue	Black, orange and blue	Black	Black
Documentation				
Technical data sheet	TDS000138	TDS000647	TDS000690	TDS000691

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Liquid-tight fittings

	T&B Liquidtight Systems®			**Carflex®**		
Product line	Series LTxxP	Series LTxxM	Series LT QC	Series LN	Series LT43	Series LT
Approvals and certifications						
UL 514B	Yes	Yes	Yes	Yes	Yes	Yes
CSA C22.2, No. 18.3	Yes	Yes	Yes	Yes	Yes	Yes
CE certification, IEC/EN 61386	No	No	No	No	No	No
RoHS	Yes	Yes	Yes	Yes	No	Yes
Halogen-free	No	No	No	No	No	No
Product range						
Trade sizes (inches)	⅜ to 2	⅜ to 2	⅜ to 1	½ to 1	½ to 1	⅜ to 1
Orientation	Straight, 45˚ and 90˚	Straight, 45˚ and 90˚	Straight	Straight, 90˚	Straight, 90˚	Straight, 90˚
Thread	NPT or metric	NPT	NPT	NPT	NPT	NPT
Materials						
Bodies	Thermoplastic	Steel galv.	Thermoplastic	PVC	Nylon 6/6	Nylon 6/6
Seals and gaskets	Neoprene	Santoprene	Neoprene	PVC	PVC	Nylon
Colors	Black	Metallic	Black or gray	Gray	Black	Black or gray
Ingress ratings						
UL	Wet locations	Wet locations	Wet locations	Wet locations	Wet locations	Wet locations
NEMA 250	Type 4, 4X, 6	Type 4, 4X, 6	Type 4, 4X	–	–	–
IEC 60529	IP67	–	IP66	–	–	IP 68
Documentation						
Technical data sheet	TDS000236	TDS000637	TDS000137	TDS000668	TDS000669	TDS000672

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Non-metallic solutions

Type C product overview

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Flexible non-metallic conduit

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Product line	Type JFBD	Type CYL	Type XPCS	Type CUS
Approvals and certifications				
UL 1660, 1696	Yes	Yes	Yes	Yes
CSA C22.2, No. 227.2.1, .3	Yes	Yes	Yes	Yes
CE certification, IEC/EN 61386	Yes	Yes	Yes	Yes
RoHS	Yes	Yes	Yes	Yes
Halogen-free	Yes	Yes	Yes	Yes
Trade sizes				
UL (inches)	⅜ to 1½	¼ to 5	⁵⁄₁₆ to 2½	½ to 1½
CSA (mm)	12 to 41	8 to 129	10 to 63	16 to 41
NW (mm)	12 to 48	7 to 125	7 to 95	17 to 48
Materials				
Core — special formulated	Polyamide 6	Polyamide 6	Polyamide 6	Polyamide 6
Multi layer	Blue/blue	–	Black/green or orange	–
Colors	Blue	Black or gray	Black	Black or gray
Documentation				
Technical data sheet	TDS-JFBD-16310-08	TDS - CYL - 10010-23	TDS-CUS-16160-13	TDS-CUS-15030-04

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Liquid-tight fittings

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Product line	Type xVNx	Type xVAx	Type xVWx	Type xVBx
Approvals and certifications				
UL 1696, UL 514B	Yes	Yes	Yes	Yes
CSA C22.2, No. 227.2.1, .3	Yes	Yes	Yes	Yes
CE certification, IEC/EN 61386	Yes	Yes	Yes	Yes
RoHS	Yes	Yes	Yes	Yes
Halogen-free	Yes	Yes	Yes	Yes
Product range				
Trade sizes (inches)	½ to 2	½ to 2	½ to 2	½ to 2
Orientation	Straight	45° elbow	90° elbow (hard)	90° elbow (curved)
Thread	NPT or metric	NPT or metric	NPT or metric	Metric
Materials				
Bodies — special formulated	Polyamide	Polyamide	Polyamide	Polyamide
Gaskets	NBR reinforced	NBR reinforced	NBR reinforced	NBR reinforced
Colors	Black or gray	Black or gray	Black or gray	Black or gray
Ingress ratings				
UL 50E	–	–	–	–
NEMA 250	Type 4, 4X, 12	Type 4, 4X, 12	Type 4, 4X, 12	Type 4, 4X, 12
IEC 60529	IP66, IP68, IP69	IP66, IP68, IP69	IP66, IP68, IP69	IP66, IP68, IP69
Documentation				
Technical data sheet	TDS - BVNV-N-22004-07	TDS-BUAV-N-UL-24233-04	TDS - BVWV-N-22015-04	TDS - BVBV-M-22035-06

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Non-metallic solutions
Sample kits

ABB non-metallic cable protection system solutions covers an extremely wide range of installations and applications.

Non-metallic cable protection products addresses industry, application, standard, compliance, installation cost and reliable performance requirements.

Order a sample kit today to see for yourself our product solutions and capabilities first-hand!

T&B Liquidtight Systems® type A and B non-metallic sample kit
Part no.: LTSNM-KIT

Materials included:
- LT50P-QC-B — ½" straight, Bullet® quick-connect fitting
- LT950P — ½" 90°, Bullet® fitting
- 3721-TB — ½" straight, type A steel fitting
- TYPEA50-200 — ½" type A, UL LFNC-A
- LTC050 — ½" type B, UL LFNC-B
- Technical data sheets

PMA® type C non-metallic sample kits
Samples kits are available for a wide range of application solutions.

Sample kits are in stock and available for immediate delivery.
How to order:
1. Contact your local ABB sales representative to order
2. Supply your contact information and mailing address
3. ABB sale representative to order sample kit from EP Sales Portal

| General | Food and bev | Divisible | UL products | Multi-layer |