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# Tool Handles and Telescopes

Exel Composites – Your Innovation Partner for Composite Solutions



# High-value tubes and assembled solutions

Exel Composites is the world's leading supplier of composite tubes, tool handles and telescopes for various applications. In addition to high-quality composite tubes, we offer assembled tool handles and telescopes to OEM businesses, ensuring our customers a leading position in their chosen market.

## Adding value for your business

Exel Composites' continuous production methods used are **co-winding, pultrusion and pullwinding**. Composite structure optimization and efficient production runs ensure high quality, cost effective and competitive products for our customers. Composites offer you strength, stiffness and low weight that cannot be achieved with any traditional material. In addition, built-in features like non-conductivity, antimicrobial treatment or FDA compliance, offer unique material benefits. Composite tube can be CNC-drilled, ground or cut to tolerance safely without exposing our customer to composite dust or dirt. Exel Composites' tube production and automated assembly for tool handles and telescopes is ISO 9001 and ISO 14001 certified. Tool handles and telescopes can be fitted with wide variety of accessories, such as handgrips, threads and end plugs.

## Branding services

Our experience and innovations in composite technology and high quality printing of composite tubes offer our customers various possibilities to **identify their products**. Tubes and moulded parts are available in your company colours according to RAL or Pantone codes.



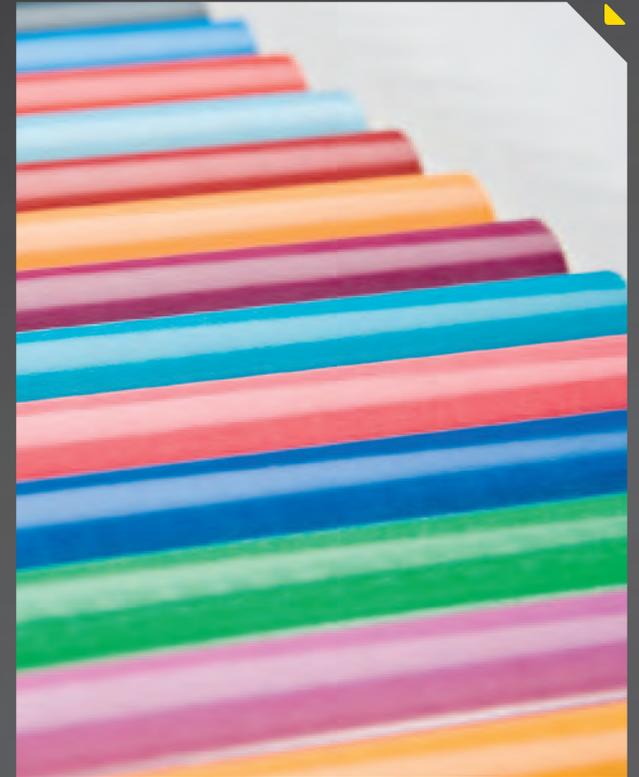
## Environmentally friendly material

Man-made composite structures are long-life without rust or rotting, reducing the need for replacement and maintenance. They enable lower energy consumption and energy savings in many applications. During the

recent years we have also worked to complete our recycling operations. At Exel Composites we also produce materials also from natural fibres and natural base resins. They show some exciting properties which complement the glass, carbon and synthetic fibres that are more common in our man-made composites.

# Composite tubes

Exel Composites is world's largest manufacturer of thin-walled pullwound tubes and hollow profiles. Pullwinding process enables the reduction of wall thickness and weight while retaining and improving stiffness and strength compared to conventional pultrusion.



## Tubes for tool handles

Exel Composites provides a wide range of high quality tubes and hollow profiles for tool handles, whether **low weight, ultimate stiffness or other mechanical feature** is specific. Exel Composites' developed pullwinding technology gives the possibility to have accurate control of the final product by adjusting the amount of fibres lengthwise and crosswise. All tool handle tubes include a non-woven surface which provides excellent finish with UV-protection and deep colours.

## Tubes for telescopes

Various telescope applications are based on Exel Composites' high quality composite tube and hollow profile platforms, which is a **combination of right raw material** (fibres and resin systems), **optimized wall thickness and clearance between the tubes**. These ensure low weight, ultimate stiffness, special dimensions or some other specific features. Exel Composites' developed manufacturing technologies give the possibility to have accurate control of the final product by adjusting the amount of fibres lengthwise and crosswise. Our wide range of manufacturing technologies, pullwinding, co-winding and pre-preg moulding, give us a leading position in composite tube market with the vast variety of tubes tailored to our customer requirements.



## Tubes for electrical applications

Exel Composites provides a wide range of insulating foam-filled tubes, hollow tubes and solid rods for live working and non-live working electrical applications. Exel Composites' developed pullwinding technology gives the possibility to have accurate control of the final product by adjusting the amount of fibres lengthwise and crosswise. Electrical application tubes are always manufactured from high quality raw materials (glass fibres with epoxy resin system). Tubes can be painted and/or lacquered to prevent water absorption. Tubes comply with electrical standard **IEC60855**

## Tubes for hygienic applications

Whether the product features should include **antibacterial treatment, autoclavable structure**, compliance with certain industrial standard or some other features, Exel Composites offers solution with a wide range of high quality tubes and hollow profiles for hygienic applications. Exel Composites' developed pullwinding process gives the possibility to use many different fibres and resin systems, which ensures a hygienic yet strong structure.





# Tool handles



Exelens™ fixed length handles

UV-resistant glassfibre Exelens™ handles are available according to customer specification (length, colour, accessories). Composite tool handle is **smooth and warm to touch** even in cold and wet conditions due to high-quality glassfibre surface. Exelens™ is a stiff and lightweight tool handle for long-term use. Special resins are available e.g. for hospital or food service applications.

## Exelens Eco™ fixed length handles

Fixed length handles from glassfibre, either plain tube or ready assembled with handgrip and/or thread. Glassfibre surface is pleasant to touch even in cold and wet conditions. Exelens Eco™ **high volume tool handles** are manufactured by most cost-efficient pultrusion technology.



## System 30 light weight structures

S30 comprises composite tubes with an outside diameter of 30 mm and a wide range of connectors. The versatile S30 provides tools for developing new applications or for updating existing ones at home or commercially. The non-corroding structures can be utilized indoors and outdoors, e.g. for garages and boat covers, supermarket kiosks and promotion stands.

## Quick-Lock™ telescopic handle

Two-part telescopic glassfibre handle is adjustable to required length with an easy to operate locking system. Quick-Lock™ system requires only a slight twist movement to lock and release the telescope in any position. Quick-Lock™ is **autoclavable**, since there are no metal parts.



	Standard tube diameters (outer/inner)	Min length (from)	Max length (to)	Min. order quantity (MOQ) pcs	Antimicrobial treatment
<b>Exelens™</b>	22/19.5 mm (0.87"/0.77") 23.5/20.5 mm (0.93"/0.81") 25/22 mm (0.99"/0.87") 25.4/22 mm (1.00"/0.87")	700 mm (2.3 ft)	1550 mm (5.1 ft)	1000	YES
<b>Exelens Eco™</b>	25.4/22 mm (1.00"/0.87")	700 mm (2.3 ft)	1550 mm (5.1 ft)	20000	
<b>Quick-Lock™</b>	22/19.5 mm (0.87"/0.77") 23.5/20.5 mm (0.93"/0.81") 25.4/22.8 mm (1.00"/0.90") 27/24.3 mm (1.60"/0.96")	1000 mm (3.3 ft)	4000 mm (13 ft)	1000	YES

**Notes:** Colour coding available • All tubes are UV-resistant • All tool handles are autoclavable

# Telescopes



reddot design award  
winner 2008

## Xtel™ System

Diversified telescope system with three tube options, glassfibre, hybrid and carbon fibre. A stiff, yet lightweight pole is **easy to manage and transport**. Vertical Red-Dot™ awarded locking system is available in polymer-metal construction (HD = Heavy Duty) or improved polymer (ST = Standard), both having operating temperature -30°C - + 80°C (-58+176°F).

## Universal™ telescopic system

Strong telescopic pole designed and produced for **tough and demanding applications**, it is yet pleasant and hygienic to use. Tubes are glassfibre or carbon fibre based. Strong locking force, operating temperature -50-+80°C (-58-+176°F), nuts and screws stainless steel. Exel Composites' **camouflage support poles** are Universal-based telescopic systems, constructed to tolerate sand and dust. Nato Green or Sand coloured poles can be equipped with special ground foot, spreader or rubber neck, or step on spring.



## Extender™ telescopic system

Technical performance of the two or three part glassfibre Extender™ is based on **Trioval tube shape**, which prevents rotation of the tubes during operation. Telescope is comfortable and ergonomic to use. Tubes slide easily back and forth when lock is in open position.

	Standard tube diameters (outer/inner)	Min length (closed)	Max length (extended)	Weight	Locking force
<b>Extender™</b>	Tri34/31 mm (1.34/1.22") Tri28/25.3 mm (1.10/1.00") Tri22/19.3 mm (0.87/0.75")	1000 mm (3.3 ft)	4100 mm (13.5 ft)	0.72 kg (1.6 lb) 3-part/glass fibre L=1000 (3.3 ft)	700
<b>Universal™</b>	16.5/12.5 mm (0.65"/0.49") 23/18 mm (0.91"/0.71")* 23/19.5 mm(0.91"/0.77")** 30/26 mm (1.18"/1.02") 37/33 mm (1.46"/1.30") 44/40 mm (1.73"/1.58") 51/47 mm (2.01"/1.85") 58/54 mm (2.28"/2.13")	1000 mm (3.3 ft)  <i>Any running combination of two (2) to eight (8) sections available.</i>	20000 mm (65 ft)	1.6 kg (3.5 lb) 4-part/glass fibre L=1000 mm (3.3 ft)  4.2 kg (9.2 lb) 5-part/carbon fibre L=2000 mm (6.6 ft)	900
<b>Xtel™</b>	18/15 mm (0.71"/0.59") 22/18 mm (0.87"/0.71")*** 22/19.5 mm (0.87"/0.77") 26/23 mm (1.02"/0.91") 30/27 mm (1.18"/1.07") 34/31 mm (1.34"/1.22") 38/35 mm (1.47"/1.38") 42/39 mm (1.65"/1.54") 46/43 mm (1.81"/1.69") 50/47 mm (1.97"/1.85") 54/51 mm (2.13"/2.01") 58/55 mm (2.28"/2.17")	1500mm (4.9ft)  <i>Any running combination of two (2) to twelve (12) sections available.</i>	22000 mm (72 ft)	1.8 kg (3.9 lb) 4-part/glass fibre L=1800 mm (5.9 ft)  2.4 kg (5.3 lb) 6-part/hybrid L=1800 mm (5.9 ft)  4.7 kg (10.4 lb) 9-part/carbon L=2050 mm (6.7 ft)	700 ST = Standard lock  1000 HD = Heavy Duty lock

**Notes:** The outermost tube is always glassfibre for isolative purpose • Spare parts available upon telescope order  
• Xtel™-tubes from OD 22mm (0.87") to OD 50mm (1.97") are available in 1.25mm (0.05") wall thickness

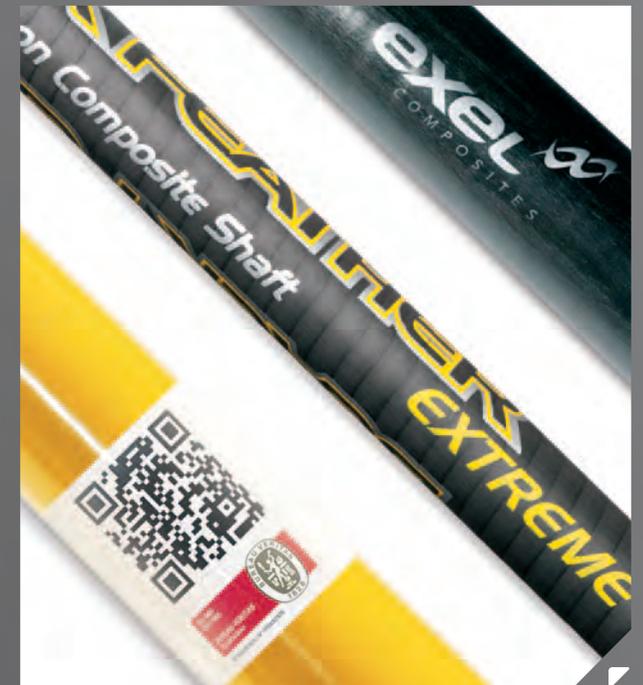
\* Available only in glassfibre/olive green and yellow \*\* Available only in glassfibre/marble grey or carbon fibre/black \*\*\* Available only in hybrid/red



Value adding services

## Branding

Due to Exel Composites' long history in sports poles, we have strong knowledge in marking and branding of the composite tubes. Our tailor-made silk printing equipment is optimized for tube printing (diam. 20–60 mm/0.79"–2.36") and we are capable to **silk print** with more than one colour. Also **laser-, tampo- and ink jet printing** methods are available for tubes and moulded parts. All company logos, trade marks, EAN/UPC/QR codes can be printed to identify your brand. Company colours according to **RAL or Pantone** colour codes are available for tubes and moulded parts. Tool handles and telescopes can also be marked with company **labels or stickers**, either individually on the product or e.g. in plastic wrapped bundles and shipping boxes.





## Accessories

Composite tubes combined with a variety of **handgrips, threads and end plugs** provide a ready-made solution for professional cleaning and consumer end products. High quality polyamide handgrips are UV-resistant and available in all standard colours. Tool handles and telescopes can also be fixed with very strong glass reinforced polyamide threads (Scandinavian, German, Italian, Acme etc.). Handgrips and threads are injection glued for heavy use. Also wide range of adapters, special plugs, angle cranks and cones are available to fit various threads.

Exel Composites' **System 30™** lightweight structures are combination of glassfibre tubes 30/26mm (1.18"/1.02") and wide variety of connectors made of injection-moulded plastic. These non-corroding structures can be utilized both outdoors and indoors. **Tri-Xtel™** tripod support, a stand-alone system for Universal™ and Xtel™ telescopes, is made of glassfibre tubes and Red-Dot™ awarded Xtel™ locks.

## Assembly

Exel Composites' tool handle and telescope assembly is automated and quality is ensured and certified according to **ISO 9001** standard. Assembled tool handles and telescopes are packed according to customer specifications, e.g. in cartons, cardboards, plastic sock, bundling or pallets.

## Fabrication

Composite tubes for tool handles and telescopes can be fabricated using the same methods as those employed for reinforced plastics. They can be easily **tolerance cut or drilled**, either holes or variable shapes by CNC machinery workshop. Tubes can be also ground and finished with painting and/or lacquering.

	Exelens™	Exelens Eco™	Extender™	Universal™	Xtel™
 <b>Handgrips</b>	YES	YES	YES		YES
 <b>Threads</b>	YES	YES	YES	YES	YES
 <b>End plugs</b>	YES	YES	YES	YES	YES
 <b>Special plugs and adapters*</b>	YES	YES	YES	YES	YES
 <b>System 30 connectors**</b>	YES	YES		YES	YES

\* Depending on tube diameter \*\* Available only for 30/26mm (1.18"/1.02") glassfibre tube

# Exel Composites

Exel Composites specializes in the developing, designing, manufacturing and marketing of strong, durable and lightweight composite tubes and hollow profiles. The Exel Composites' quality and environmental policy complies with the requirements of the standards ISO 9001 and ISO 14001. The unrivalled lightweight and mechanical qualities of composite materials make them unbeatable in terms of durability and functionality. Composite is the **solution of the future**. It delivers added value, helps to differentiate and creates one element to the brand.

## From tubes to tool handles and telescopes

Our series of high quality composite tubes, ready-assembled tool handles and telescopes, as well as tube and telescope platforms, offer the right products for both demanding professional tools and consumer tool handles. Bringing together your application know-how, technical requirements and financial targets, and our fibre technology, chemistry and process/assembly know-how, we are able to create **the right technical and economical solution for you**.



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