

Stainless Steel Wire Rope



Grade 304, 316, 316L			
	7x7	7x19	1x19
0.8mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.5mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.0mm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





WIRE ROPE CONSTRUCTIONS – TECHNICAL GUIDE

1x19 CONSTRUCTION

Technical Description

1x19 consists of **one strand made up of 19 individual wires** (1 centre wire + 6 + 12 layers). There are **no secondary strands**, making it a **true single-strand rope**.

- Extremely **low elongation**
 - Very **high tensile strength**
 - **Minimal flexibility**
 - Smooth, compact outer surface
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Key Characteristics

- **Rigidity:** Very high
 - **Flexibility:** Very low
 - **Stretch:** Minimal
 - **Surface finish:** Clean and straight
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Advantages

- Maintains a **perfectly straight line under tension**
 - Excellent for **aesthetic applications**
 - High strength for its diameter
 - Low creep/stretch over time
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Disadvantages

- **Poor flexibility** — cannot bend around pulleys
 - Prone to **kinking if mishandled**
 - Not suitable for dynamic loads
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Applications (In-Depth)

- **Balustrade systems** (most common use – especially 4mm 1x19)
- **Yacht guard rails** (clean look + corrosion resistance)
- **Architectural cable systems**
- **Tension structures**
- **Static load-bearing lines**

👉 This is the **go-to construction for architectural and visual applications**

7x7 CONSTRUCTION

Technical Description

7x7 consists of **7 strands**, each made up of **7 wires** (1 + 6 configuration per strand). These strands are then laid around a core.

- Moderate flexibility
 - Balanced strength-to-flexibility ratio
 - More forgiving than 1x19
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Key Characteristics

- **Rigidity:** Medium
 - **Flexibility:** Medium
 - **Stretch:** Moderate
 - **Surface:** Slightly textured
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Advantages

- Good **all-round construction**
 - Can handle **mild bending**
 - More **durable in handling** than 1x19
 - Versatile across many industries
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Disadvantages

- Not as straight/clean visually as 1x19
 - Lower fatigue resistance than 7x19
 - Moderate stretch under load
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Applications (In-Depth)

- **General purpose rigging**
- **Control cables**
- **Garage door cables**
- **Light industrial uses**
- **Agricultural applications**

👉 This is the **middle-ground product** — useful but rarely the “best” choice for high-end or high-flex applications

7x19 CONSTRUCTION

Technical Description

7x19 consists of **7 strands**, each made up of **19 wires** (1 + 6 + 12). This creates a **multi-layered, highly flexible rope**.

- High flexibility due to many fine wires
 - Excellent fatigue resistance
 - Lower rigidity
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Key Characteristics

- **Rigidity:** Low
 - **Flexibility:** Very high
 - **Stretch:** Higher than others
 - **Surface:** More textured
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Advantages

- Excellent for **dynamic and moving systems**
 - Handles **repeated bending and fatigue**
 - Strong and durable in **marine environments**
 - Easy to handle and install
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Disadvantages

- Not visually straight (unsuitable for balustrades)
 - Higher stretch under load
 - Slightly lower tensile efficiency vs 1x19
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Applications

- **Marine rigging (non-structural)**
- **Winches and pulleys**
- **Hoisting systems**
- **Gym equipment cables**
- **Shade sail tensioning (where movement exists)**
- **Fishing and trawling gear**

👉 This is the **best construction for movement and flexibility**

CHEMICAL COMPOSITION OF STAINLESS STEELS (304 / 316 / 316L)

GRADE	CHEMICAL COMPOSITION of STAINLESS STEELS							
	C	Si	Mn	Cr	Ni	Mo	P	S
304	≤ 0.08	≤ 1.00	≤ 2.00	18.0–20.0%	8.0–10.5%	–	≤ 0.045	≤ 0.300
316	≤ 0.08	≤ 1.00	≤ 2.00	16.0–18.0%	10.0–14.0%	2.0–3.0%	≤ 0.045	≤ 0.300
316L	≤ 0.03	≤ 1.00	≤ 2.00	16.0–18.0%	10.0–14.0%	2.0–3.0%	≤ 0.045	≤ 0.300

GRADE	304	316	316	316 L	316	316L	316	311L	316L	316L	
	c/≤ 0.08%	≤ 1.00%	≤ 1.00%	≤ 2.00%	≤ 1.00%	≤ 2.00%	≤ 2.0%	≤ 2.0%	≤ 1.00%	≤ 1.0%	≤ 0.03%

WIRE ROPE LAY TYPES

REGULAR LAY (STANDARD)

RHRL – Right Hand Regular Lay

- Strands: Right-hand (clockwise)
- Wires: Left-hand (opposite direction)
- Most common lay

Characteristics:

- Stable under load
- Low rotation
- Good crush resistance
- Straight appearance

Applications:

- Balustrades
 - Yacht rails
 - Architectural cables
 - General rigging
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LHRL – Left Hand Regular Lay

- Strands: Left-hand (counterclockwise)
- Wires: Right-hand

Characteristics:

- Same as RHRL, opposite direction

Applications:

- Special installations
 - Systems requiring opposite lay to balance torque
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LANG LAY (ORDINARY LAY)

RHOL – Right Hand Ordinary Lay (Lang Lay)

- Strands: Right-hand
- Wires: Right-hand (same direction)

Characteristics:

- High flexibility
- Increased fatigue resistance
- Greater wear surface
- Higher rotation tendency

Applications:

- Winches
 - Pulleys
 - Crane systems
 - Marine working lines
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LHOL – Left Hand Ordinary Lay

- Strands: Left-hand

- Wires: Left-hand

Characteristics:

- Same as RHOL, opposite direction

Applications:

- Specialist lifting systems
- Torque-balanced applications

QUICK SELECTION GUIDE

- Straight, non-rotating → **Regular Lay (RHRL)**
- Flexible, moving systems → **Lang Lay (RHOL)**

STANDARD SUPPLY

- Most stainless steel wire rope supplied as:
👉 **RHRL (Right Hand Regular Lay)**

Size dependent, we supply in reels of 100m, 200m, 500m and 1,000m, on wooden reels in export packaging with protective covering and degreasing.

PVC & PU coating available and black oxide on request.

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