

Metal-Asia

INDUSTRIAL WIRE & RAW MATERIALS GUIDE

Steel Wire and Wire Rod for Welded Reinforcement Mesh Production

Prepared by: [Metal-Asia.pw](#) — Global Industrial Procurement & Supply Chain Solutions

Author: [Milosh Kovachevi](#)

Date: May 2026

Target Markets: Europe, North America, Middle East, Africa, Southeast Asia, Latin America

TABLE OF CONTENTS

1. [Classification of Wire for Reinforcement Mesh](#)
2. [VR-1 Deformed Wire \(Ribbed\)](#)
3. [VR-2 High-Strength Deformed Wire](#)
4. [Steel Wire Rod \(Raw Material\)](#)
5. [General Purpose Wire \(OK — Binding Wire\)](#)
6. [Other Wire Types for Mesh Welding](#)
7. [Packaging, Coils & Dimensions](#)
8. [HS Codes & Customs Classification](#)
9. [Technical Standards & Certification](#)
10. [Summary Specification Table](#)

1. CLASSIFICATION

1.1 Wire Types Used for Reinforcement Mesh Production

No.	Wire Type	Standard	Diameter, mm	Application
1	VR-1 deformed (ribbed) wire	Industry standard	3, 4, 5	Reinforcement mesh for concrete
2	VR-2 high-strength deformed wire	Industry standard	3, 4, 5, 6, 7, 8	High-load reinforcement mesh
3	Steel wire rod	Industry standard	5–10	Raw material for wire drawing
4	OK wire (binding wire)	Industry standard	0.16–10	Binding, general purpose
5	OK-TNS (non-heat-treated)	Industry standard	0.5–10	General purpose

No.	Wire Type	Standard	Diameter, mm	Application
6	OK-TOCH (heat-treated)	Industry standard	0.5–8	Binding applications
7	BP-1 (uncoated)	Technical specification	2.5–5	Road and construction mesh
8	Welding wire	Industry standard	0.8–6	Welding operations

1.2 Steel Grades for Wire Production

Steel Grade	Carbon Content, %	Application
Low carbon	≤0.05%	General purpose OK wire
Low carbon structural	≤0.10%	OK wire, binding wire
Structural grade 2	≤0.15%	Wire rod for packaging
Structural grade 3	≤0.20%	Wire rod, VR-1, VR-2

2. VR-1 DEFORMED (RIBBED) WIRE

2.1 General Information

VR-1 is a cold-drawn deformed steel wire with a periodic profile featuring transverse ribs. It is used as reinforcement for concrete structures and for manufacturing welded reinforcement and masonry mesh.

2.2 Technical Specifications

Parameter	Value
Material	Low-carbon steel
Profile	Deformed, periodic ribs
Heat treatment	None (cold-drawn)
Manufacturing method	Cold drawing

2.3 Size Range & Mechanical Properties

Diameter, mm	Rib Depth (h), mm	Rib Pitch (s), mm	Rib Length, mm	Tensile Force, kgf (min)	Yield Force, kgf	Elongation, % (min)	Linear Weight, kg/m
3.0	0.15	2.00	0.60	400	355	2.0	0.052
4.0	0.20	2.50	0.80	720	630	2.5	0.092
5.0	0.25	3.00	1.00	1085	985	3.0	0.144

2.4 Packaging & Delivery

Parameter	Value
Delivery form	Coils
Coil weight	800–1,100 kg
Delivery method	In coils

2.5 Key Advantages of Deformed Wire

- Superior bonding with concrete compared to smooth wire
- High tensile strength
- Suitable for welded structures
- Extended service life
- Versatility in construction applications

3. VR-2 HIGH-STRENGTH DEFORMED WIRE

3.1 General Information

VR-2 wire offers enhanced mechanical properties compared to VR-1, designed for prestressed concrete applications requiring higher load-bearing capacity.

3.2 Size Range

Parameter	Value
Diameters	3, 4, 5, 6, 7, 8 mm
Profile	Deformed, periodic ribs

3.3 Packaging

Parameter	Value
Delivery form	Coils
Coil weight	30–1,500 kg
Additional	Small coils 30–100 kg can be bundled into larger units up to 1,500 kg

4. STEEL WIRE ROD

4.1 General Information

Wire rod is hot-rolled round steel bar coiled into loose wound bundles. It serves as the primary raw material for wire drawing processes and is also used for concrete reinforcement, fastener manufacturing, nails, bolts, and other applications.

4.2 Standard & Sizes

Parameter	Value
Diameters	5; 5.5; 6; 6.5; 7; 8; 9; 10 mm
Delivery form	Coils (bundles) only

4.3 Steel Grades

Wire Rod Type	Steel Grades
For packaging and binding	Structural grades 1, 2, 3
For drawing (cold forming)	Structural grade 3 (custom requirements)

4.4 Technical Data by Diameter

Diameter, mm	Weight per meter, kg	Meters per ton	Coil weight, tons
5.0	0.154	6,494	1.0–1.8
5.5	0.187	5,348	1.0–1.8
6.0	0.222	4,505	1.0–1.8
6.5	0.260	3,846	1.0–1.8
7.0	0.302	3,311	1.0–1.8
8.0	0.395	2,532	1.0–1.8
9.0	0.499	2,004	1.0–1.8
10.0	0.617	1,621	1.0–1.8

4.5 Coil Dimensions

Parameter	Value
Coil weight	1.0–1.8 metric tons
Internal coil diameter	≥450 mm
External coil diameter	800–1,100 mm
Coil width	500–800 mm

4.6 Applications

- Raw material for wire drawing processes
- Concrete reinforcement
- Fastener manufacturing (nails, bolts)
- Welding electrodes
- Packaging and binding

5. OK GENERAL PURPOSE (BINDING) WIRE

5.1 General Information

OK wire is a low-carbon steel wire manufactured by cold drawing. It is used for nails, binding, fencing, and as auxiliary material in reinforcement mesh production.

5.2 Classification

By Heat Treatment:

- **Heat-treated (annealed)** — soft, ductile
- **Non-heat-treated** — higher strength

By Surface Finish:

- Uncoated (bright / black)
- Galvanized Class 1 (heavy zinc coating)
- Galvanized Class 2 (light zinc coating)

By Strength (non-heat-treated):

- Group I (lower strength, more ductile)
- Group II (higher strength, for rebar binding)

5.3 Size Range

Type	Diameter, mm
Uncoated	0.16–10.00
Galvanized	0.20–6.00

5.4 Packaging

Parameter	Value
Delivery form	Coils, bundles
Bundle weight	20–1,500 kg
Small bundles	30–100 kg (can be bundled into units up to 1,500 kg)
External diameter	800–900 mm
Internal diameter	≥450 mm
Unit volume	~0.8 m ³

6. OTHER WIRE TYPES

6.1 BP-1 Uncoated Wire

Parameter	Value
Type	Cold-drawn, uncoated
Diameter	2.5–5.0 mm
Application	Road and construction mesh

6.2 Galvanized Wire for Mesh

Parameter	Value
Coating class	Class 1 (heavy), Class 2 (light)
Application	Mesh for wet/aggressive environments

7. PACKAGING, COILS & DIMENSIONS

7.1 VR-1 Wire Standard Packaging

Parameter	Value
Form	Coil
Coil weight	800–1,100 kg
Max cuts per coil	1–2 (continuous wire preferred)
Securing	Steel strapping

7.2 Wire Rod Standard Packaging

Parameter	Value
Form	Coil (bundle)
Coil weight	1.0–1.8 metric tons
Internal diameter	≥450 mm
External diameter	800–1,100 mm
Coil width	500–800 mm
Unit volume	~0.8–1.2 m ³

7.3 OK (Binding) Wire Packaging

Parameter	Value
Form	Coils, bundles

Parameter	Value
Bundle weight	20–1,500 kg
Small bundles	30–100 kg (bundled into larger units)
External diameter	800–900 mm
Internal diameter	≥450 mm

7.4 Dimensions for Packing List

Wire Rod

Rod Diameter, mm	Coil Weight, kg	External Diameter, mm	Internal Diameter, mm	Coil Width, mm	Volume, m ³
5.5	1,000–1,800	1,000–1,200	450–550	500–700	~0.8–1.0
6.0	1,000–1,800	1,000–1,200	450–550	500–700	~0.8–1.0
6.5	1,000–1,800	1,000–1,200	450–550	500–700	~0.8–1.0
8.0	1,000–1,800	1,000–1,200	450–550	500–700	~0.8–1.0
10.0	1,000–1,800	1,000–1,200	450–550	500–700	~0.8–1.0

VR-1 Wire

Diameter, mm	Coil Weight, kg	External Diameter, mm	Internal Diameter, mm	Width, mm	Volume, m ³
3.0	800–1,100	900–1,100	450–550	500–700	~0.7–0.9
4.0	800–1,100	900–1,100	450–550	500–700	~0.7–0.9
5.0	800–1,100	900–1,100	450–550	500–700	~0.7–0.9

7.5 Coil Marking Requirements

Each coil/bundle must bear the following marking:

- Wire designation
- Standard number
- Steel grade
- Wire diameter
- Heat/melt number
- Coil/bundle weight
- Manufacturer's mark
- Date of manufacture

8. HS CODES & CUSTOMS CLASSIFICATION

8.1 Steel Wire

HS Code	Description	Duty Rate	Notes
7217	Wire of iron or non-alloy steel	—	Primary classification
7217.10	Not plated or coated, not polished	—	
7217.10.00.00	Containing <0.25% carbon	5%	Most VR-1, OK wire
7217.10.30.00	Diameter ≥0.8 mm	5%	VR-1, OK wire
7217.10.31.00	With indentations, ribs, grooves (deformed)	5%	VR-1, VR-2 (deformed)
7217.10.39.00	Other (smooth)	5%	OK, welding wire
7217.20	Plated or coated with zinc	—	Galvanized wire
7217.20.30.00	Zinc-coated, diameter ≥0.8 mm	5%	

8.2 Steel Wire Rod

HS Code	Description	Duty Rate	Notes
7213	Hot-rolled bar and rod in coils	—	Primary classification
7213.91.10.00	Containing <0.25% carbon	5%	Standard wire rod (Grades 1–3)

8.3 Welded Reinforcement Mesh (Finished Product)

HS Code	Description	Duty Rate	Notes
7314	Wire cloth, mesh, fencing	—	Primary classification
7314.20.10.00	Of deformed wire (VR-1, VR-2)	10%	Welded reinforcement mesh
7314.20.90.00	Other (smooth wire)	10%	Masonry mesh
7314.31.00.00	Zinc-coated, welded at intersections	10%	Galvanized mesh

8.4 Summary Table for Your Production

Product	Recommended HS Code
Low-carbon steel wire rod (raw material)	7213.91.10.00
VR-1 deformed wire	7217.10.31.00
VR-2 deformed wire	7217.10.31.00
OK smooth wire	7217.10.39.00
Galvanized wire	7217.20.30.00
Welded reinforcement mesh (from VR-1)	7314.20.10.00
Welded masonry mesh (smooth wire)	7314.20.90.00

9. TECHNICAL STANDARDS & CERTIFICATION

9.1 Required Certification

Standard/Regulation	Scope	Required Document
ISO 9001	Quality management	Certificate of conformity
Material test report	Chemical composition, mechanical properties	Mill test certificate (MTC)
Third-party inspection	Independent verification	Inspection certificate

9.2 Quality Documentation

Document	Content
Certificate of conformity	Compliance with applicable standards
Mill test certificate	Chemical composition, mechanical properties
Inspection certificate	Batch test results

10. SUMMARY SPECIFICATION TABLE

No.	Wire Type	Standard	Diameter, mm	Steel Grade	Coil/Bundle Weight, kg	HS Code
1	VR-1 deformed	Industry standard	3, 4, 5	Low-carbon	800–1,100	7217.10.31.00
2	VR-2 deformed	Industry standard	3–8	Low-carbon	30–1,500	7217.10.31.00
3	Wire rod	Industry standard	5–10	Grades 1–3	1,000–1,800	7213.91.10.00
4	OK heat-treated	Industry standard	0.16–10	Low-carbon	20–1,500	7217.10.39.00
5	OK non-heat-treated	Industry standard	0.16–10	Low-carbon	20–1,500	7217.10.39.00
6	OK galvanized	Industry standard	0.2–6	Low-carbon	20–1,500	7217.20.30.00
7	BP-1 uncoated	Technical spec.	2.5–5	Low-carbon	800–1,500	7217.10.39.00
8	Welding wire	Industry standard	0.8–6	Low-carbon	20–100	7217.10.39.00

APPENDIX: LINEAR WEIGHT REFERENCE TABLE

Diameter, mm	Cross-section, mm ²	Weight per meter, kg	Meters per ton
1.0	0.785	0.00617	162,338
1.6	2.011	0.0158	63,291
2.0	3.142	0.0247	40,486
2.5	4.909	0.0385	25,974
3.0	7.069	0.0555	18,018
4.0	12.566	0.0986	10,142
5.0	19.635	0.154	6,494
5.5	23.758	0.187	5,348
6.0	28.274	0.222	4,505
6.5	33.183	0.260	3,846
7.0	38.485	0.302	3,311
8.0	50.265	0.395	2,532
9.0	63.617	0.499	2,004
10.0	78.540	0.617	1,621

APPENDIX: TRANSPORTATION & STORAGE CONDITIONS

Transportation

Parameter	Requirement
Transport mode	Rail, road, sea
Loading conditions	Open or covered transport
Securing	Prevent shifting and falling of coils
Loading equipment	Cranes/forklifts with coil grabs

Storage

Parameter	Requirement
Facility	Indoor, protected from precipitation
Temperature	-40°C to +40°C
Humidity	≤80%
Stacking	On racks or pallets (not on ground)
Distance from heat sources	≥1 m

Parameter	Requirement
Shelf life	Unlimited (under proper conditions)



Global supply of VR-1 deformed wire and steel wire rod for welded mesh production

Document prepared based on international industry standards and open-source technical references. HS Codes are indicative and should be verified with your customs broker. Supplier: [Metal-Asia.pw](https://www.metal-asia.pw), Author: [Milosh Kovachevi](#).