METAL REBAR

EXCELLENT SEISMIC RESISTANCE

한-러 산업 과학기술 위원회

KOR-RUS Industrial Science & Technology Cooperation Committee

Advantages of metal rebar, which is for rebar

1. It is hard.

Metal reinforcement has stronger tensile strength than steel and can be 2 to 10 times higher depending on the material!

2. Ease of work

The density of metal reinforcement is 1.9 ton / m. This is 1.9 times that of water and 5 times that of steel. It means light. With an equally strong proportion, the weight of metal reinforcement is greater than that of steel.
9 times lower. This not only reduces transportation and handling costs, but also makes it easier to perform work on the construction site.

3. Economic

The use of metal reinforcement can reduce construction costs. The cost savings of building structures are achieved by using smaller diameter metal reinforcement compared to steel reinforcement.

4. No rust and no corrosion

Metal reinforcing bars never corrode and do not destroy concrete. In addition, material properties are virtually unchanged under adverse conditions affected by acids, alkalis and salts.

5. Properties that do not change even at cryogenic temperatures

Metal reinforcing bars have a wide range of temperatures without affecting technology and material properties at all.
It can be used at (-170°C ~ +300°C).

6. Low thermal conductivity

The thermal conductivity of metal reinforcement is 100 times lower than that of iron reinforcement, and in reality, does not conduct cold heat. Therefore, it cannot be an "ice bridge" and greatly reduces heat loss.

7. The same coefficient of thermal expansion as concrete

This prevents cracks in the concrete layer and reinforcement cracks under the influence of temperature changes.

Advantages of metal rebar, which is for rebar

8. Insulator

Magnetic field inert reinforcing bars do not conduct current and do not accumulate static energy. Changes in the strength characteristics of metal reinforcing bars with permeability to radio waves are not affected by electromagnetic fields. You are not going to live in all the skyscrapers and prisons of Faraday's Law anymore. You are not going to live in all the skyscrapers and prisons of Faraday's Law anymore.

9. Strong durability

Non-metallic reinforcement increases the durability of the structure by 2-3 times compared to metal, especially when exposed to adverse conditions, and the expected durability is more than 180 years. The need for expensive maintenance over a long period of time disappeared.

10. Eco-friendly

Does not emit harmful toxic substances.

11. All sizes available

At the request of the customer, this product requirement can be created at any time. The standard is 12 meters.

12. Minimization of building collapse in case of earthquake

As it has excellent elasticity, it absorbs external shocks applied to the building and suppresses the collapse of the building.

Applications of metal rebar

This material is actively used in various construction works.

-When laying the foundation of a building, especially a building exposed to adverse conditions
-Reinforcement structure of support and load-bearing wall
-Private construction
-Road reinforcement
-Fabrication of a combined structure to erect a building
-Strengthening the ground in mines, etc.

Comparison between reinforcement and glass fiber reinforcement

AKC's main competitor is steel reinforcement.

Its properties are similar in many ways, but according to some parameters, fiberglass is clearly superior to the usual kind of metal equipment.

Steel vs. fiberglass in specific parameters

1. Deformation: steel reinforcement-elastic metal	AKC-perfectly elastic
2. Strength Limit: Steel-390 MPa	Glass Fiber-1300 MPa
3. Thermal conductivity coefficient: the first 46W/mOC	The sexond-0.35
4. Density: Steel-7850 kg/m3	AKC-1900 kg/m3
5. Thermal Conductivity: Unlike steel, fiberglass is not thermally conductive.	
6. Corrosion resistance: Steel-Relatively fast corrosion	AKC-Stainless steel
7. Conductive: Insulator is glass fiber reinforcement	

Equal strength table of steel reinforcement and alternative composites

Steel reinforcement A500 Rs=Rsn/ys1. Rs =435/1.15 = 378 MPa		Steel counterparts Rf = Rfn * yfl/ yf * yf2				
		ACK	ABK	AYK	AAK	AKK
Breaking load (kN)	diameter(mm)	112 MPa	170 MPa	560 MPa	256 MPa	213MPa
5	4	8	6	3	5	6
11	6	12	9	5	8	8
19	8	15	12	7	10	11
30	10	19	15	8	13	14
43	12	23	18	10	15	16
58	14	26	21	12	18	19
76	16	30	24	13	20	22
96	18	34	27	15	22	24
119	20	37	30	16	25	27
171	24	45	36	20	30	32


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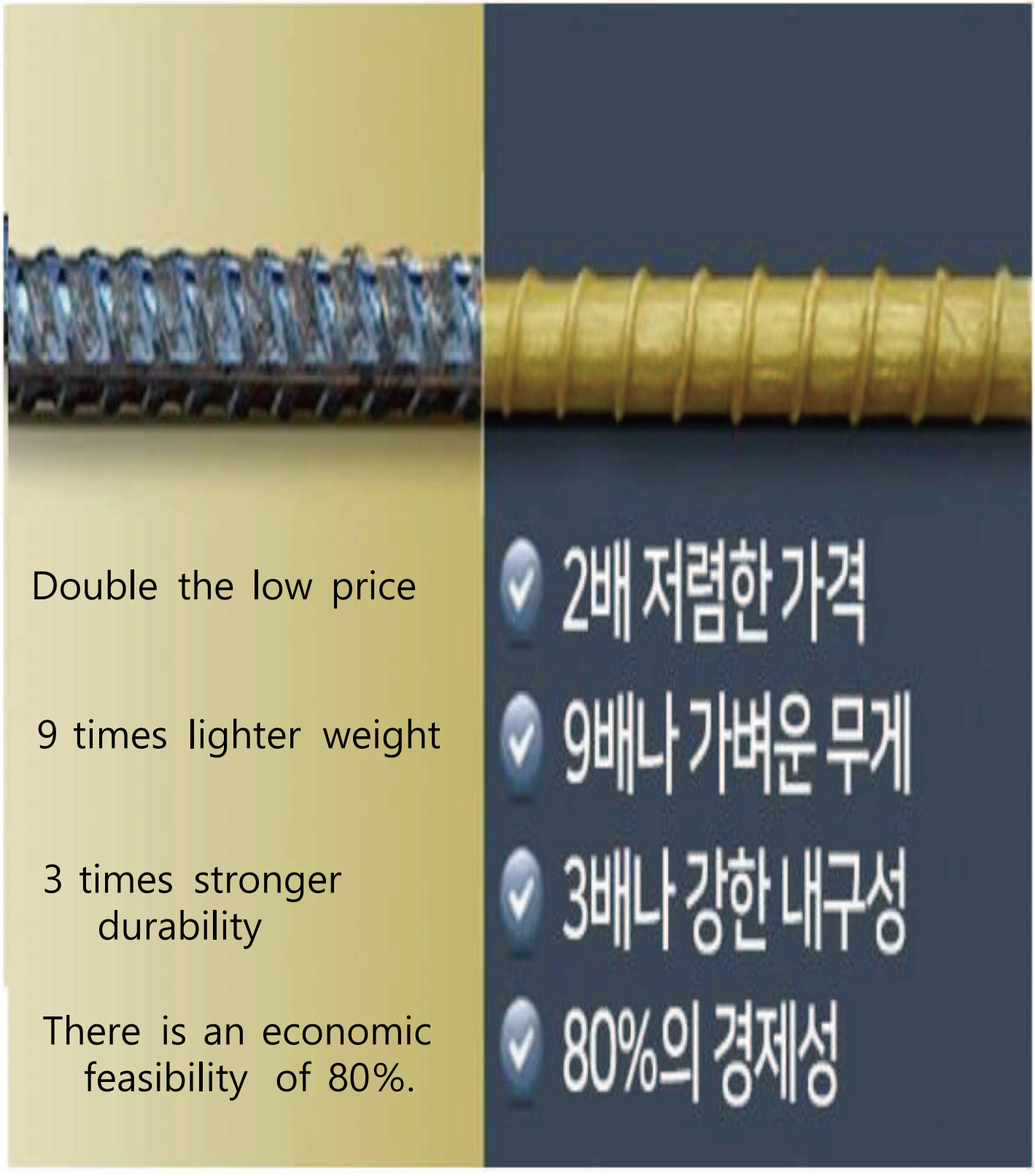
PERFECT SOLUCTION

Difference between rebar and metal



Road protection cover plate

Fences and supports

Port facilities

Steel reinforcement structure

Ground barrier

Road protection cover crown plate

Cutting strength plate in injection molding

Concrete structure

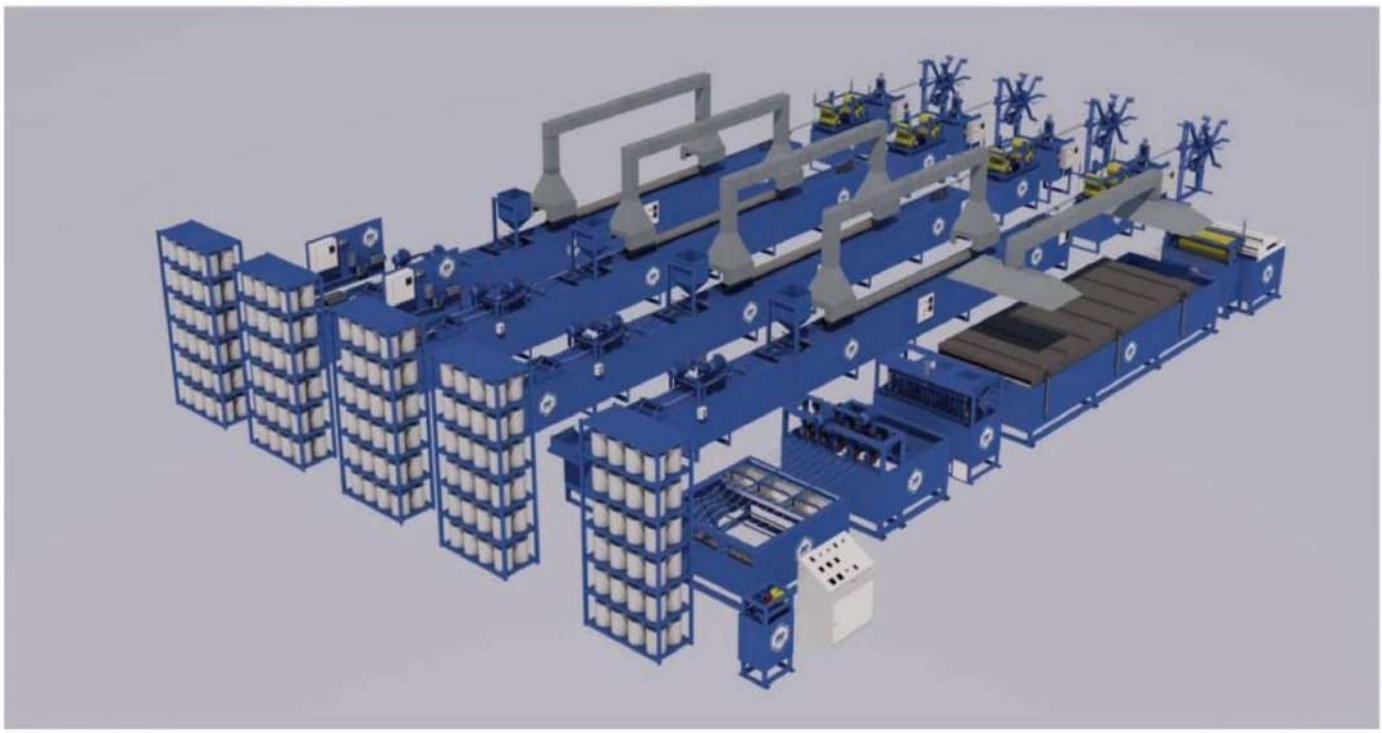
A reinforcing bar connection passage is also sufficient .

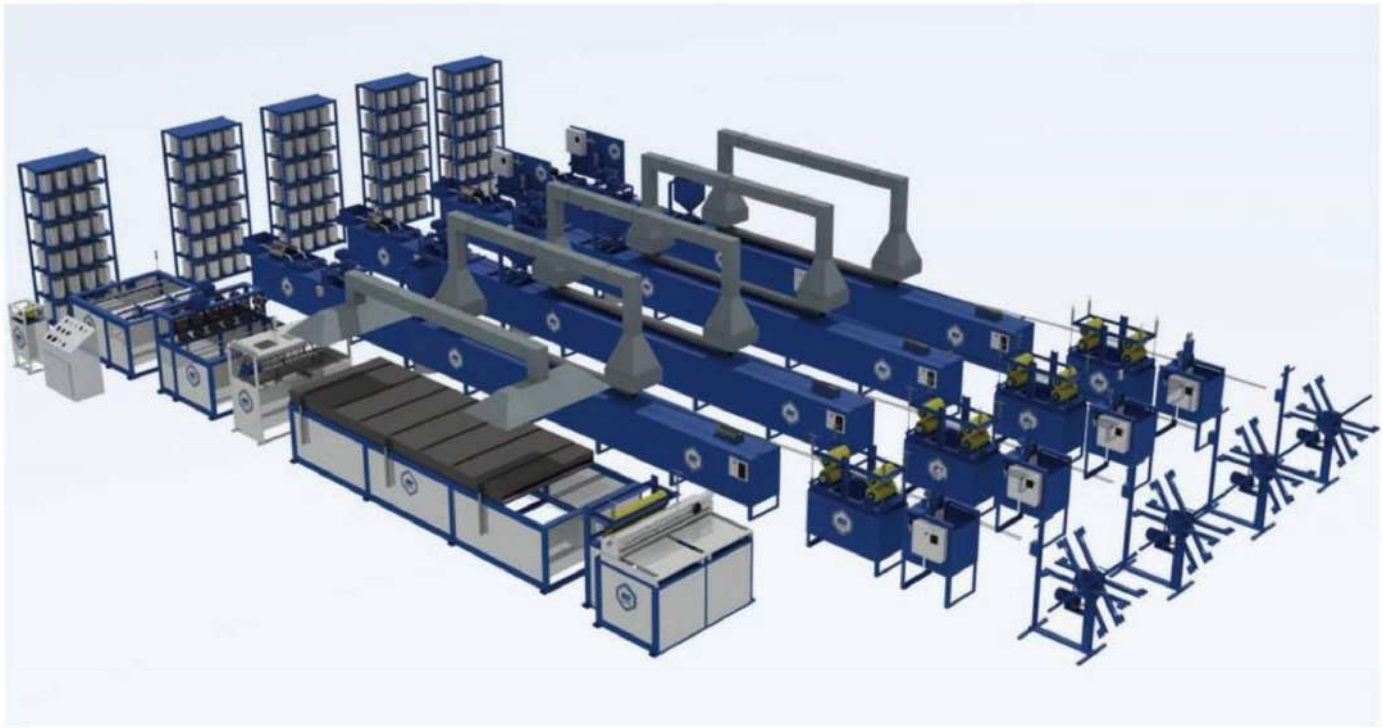
No welding is required .

Various modes of transport

Metal rebar manufacturing process

Metal rebar manufacturing process





O Equipment length: 22m

O width: 2m

O rebar diameter: 4-40mm

O daily production

1 MODEL: 12,240m-4LINE)

2 MODEL: 24,480m-8LINE)

3 MODEL: 36,720m-12 LINE)

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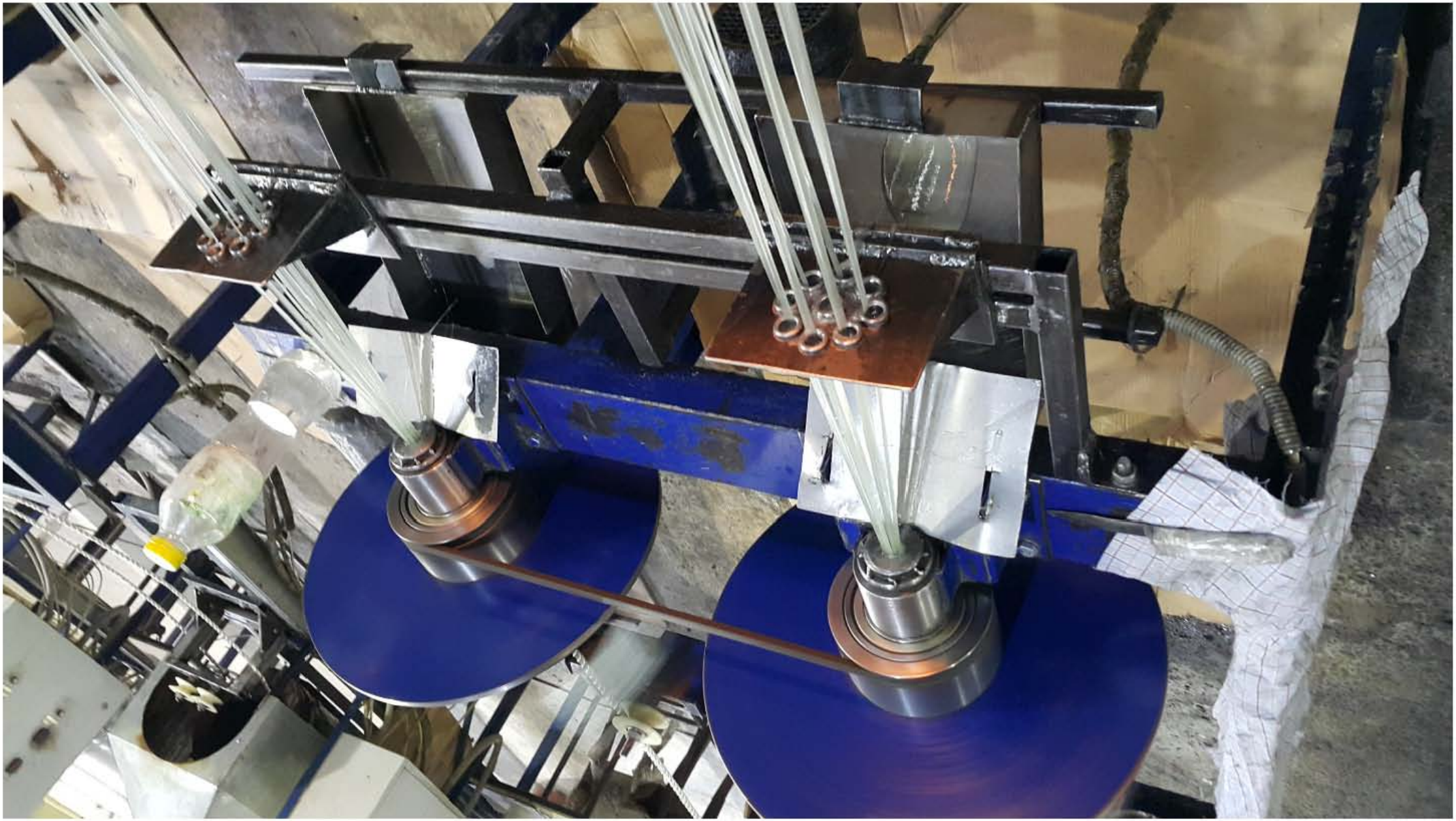


Metal rebar management

■ Investment: Production length by metal rebar model

O Installation length: 22m

O width: 2m

O Rebar diameter: from 4 to 40 mm

O Daily production 1 model: 12,240m (4 lines)

2 model: 24,389m (8 lines)

3 model: 36,720m (12 lines)

4 model: 73,440m (24 lines)

5 model: 146,880m (48 lines)

6 model: 360,720m (120 lines)

■ Profitability: 80% of the existing rebar is payable.

♣ 30% cost of rebar price

-Produce metal reinforcement at 30% of the rebar manufacturing cost

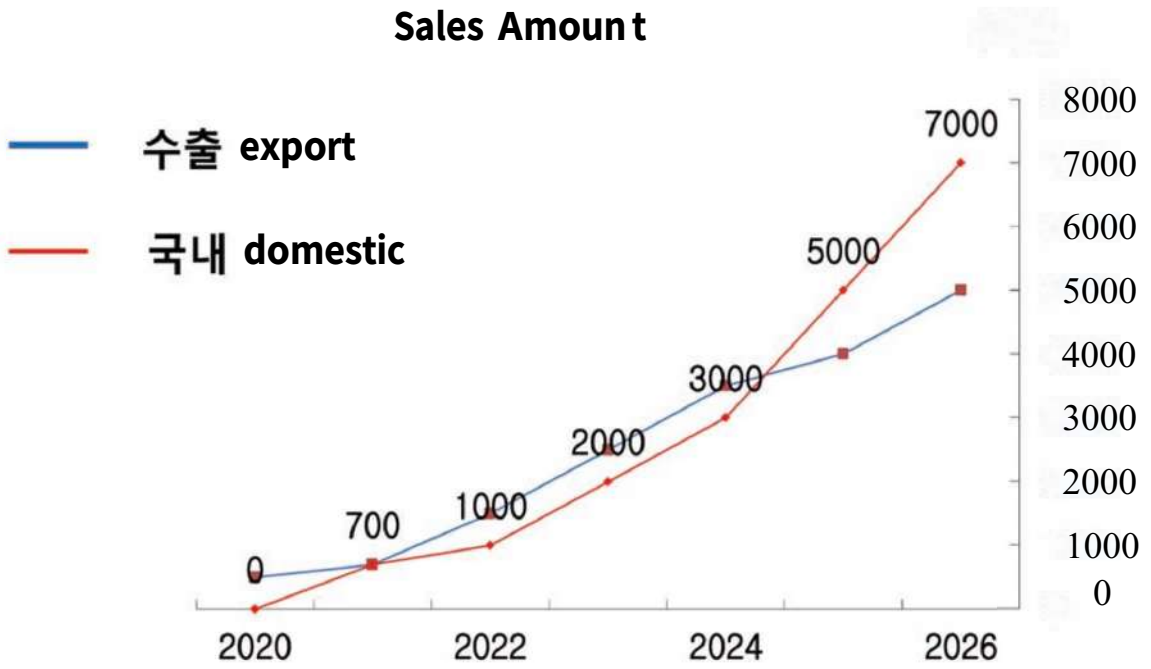
-Reinforcement replacement expected to lead to stable

♣ Reinforcement weight reduction

Management of metal rebar

■ Sales target

(Unit: one hundred million Korean won)



(KRW 100 million)

	2020	2021	2022	2023	2024	2025
sales (domestic)	0	700	1,000	2,000	3,000	5,000
sales (Export)	500	700	1,500	2,500	4,000	5,000
TOTAL	500	1,400	2,500	4,500	7,500	10,000
PROFIT	200	560	1,000	1,800	3,400	4,000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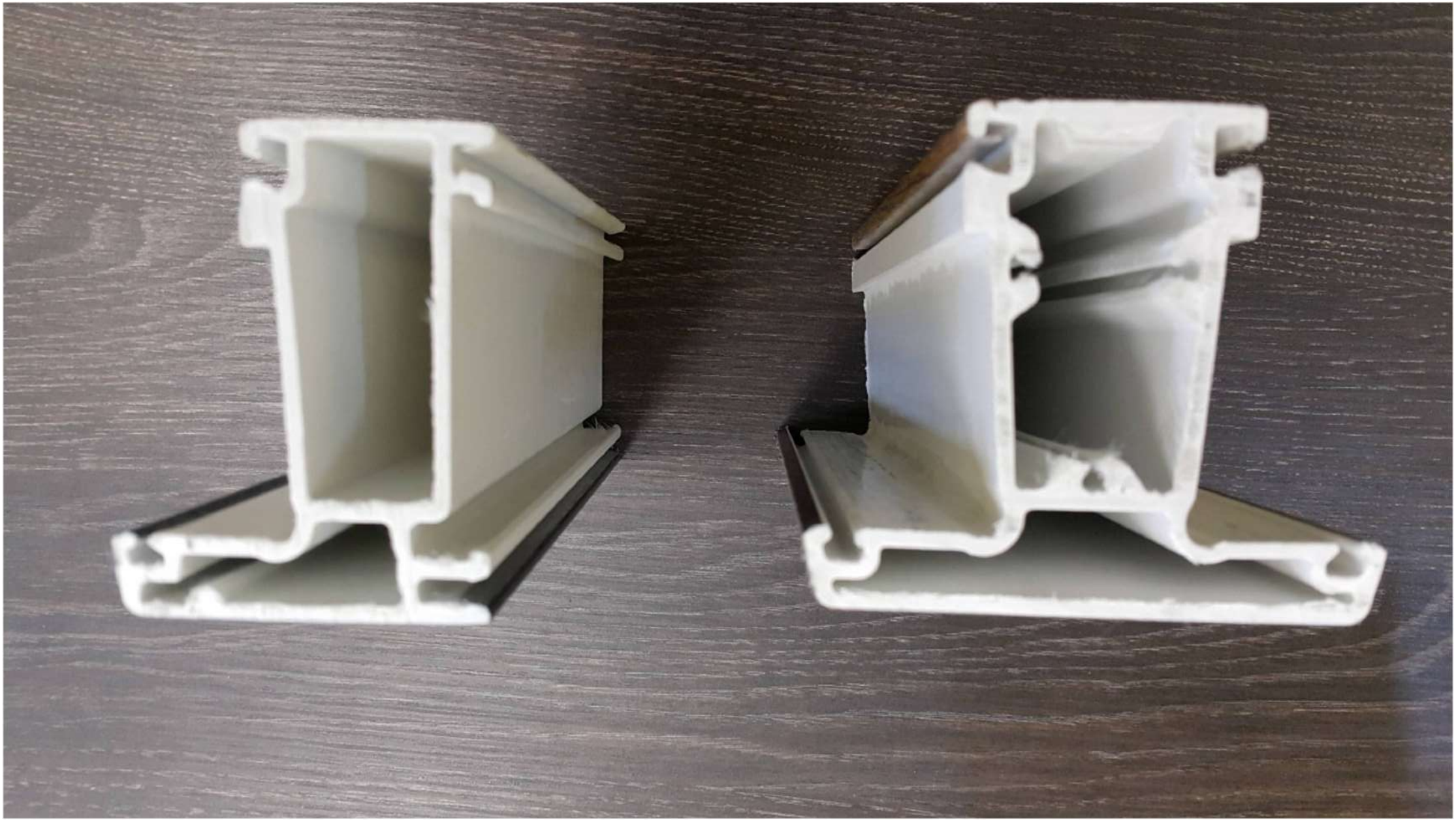

Thank you!

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