

KILN CHAINS · TECHNICAL DATA AND SPECIFICATIONS · UNIK-KC-TD-001

KILN CHAINS, HANGERS AND SHACKLES DATA SHEET

Complete specifications for kiln chain systems including hanger types, shackle dimensions, and material grades.

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1. Chain Specifications

CHAIN TYPE	WIRE DIA. (MM)	PITCH (MM)	MIN BREAKING LOAD (KN)	MAX TEMP
Round Link – Light	13 – 16	50 – 60	80 – 120	750°C
Round Link – Medium	16 – 20	56 – 72	120 – 200	950°C
Round Link – Heavy	20 – 26	72 – 105	200 – 350	1100°C
Round Link – Heat Resistant	16 – 26	56 – 105	120 – 350	1200°C
Bushed – Standard	16 – 25	100 – 200	150 – 300	750°C
Bushed – Heat Resistant	16 – 25	100 – 200	150 – 300	1100°C
Forged Link	20 – 30	100 – 150	250 – 500	950°C

2. Material Grades

GRADE	MATERIAL	MAX TEMP	APPLICATION ZONE
Standard	Carbon steel, hardened	400°C	Cold / feed zone
Alloy	Cr-Mo alloy steel	600°C	Preheat zone
Stainless 304	AISI 304	750°C	Warm zone
Stainless 310	AISI 310	1050°C	Hot / burning zone
Heat Resistant	Cast alloy (HK-40)	1200°C	Discharge / clinker

3. Hanger Types

TYPE	MATERIAL	MAX TEMP	DESCRIPTION
Bolted Hanger	Carbon steel	400°C	Bolted to kiln shell – cold zone only
Welded Hanger	Cast steel	750°C	Welded to kiln shell – standard
Cast Hanger	Heat-resistant alloy	1100°C	Cast-in-place – hot zone
Bolted Cast Hanger	Heat-resistant alloy	1050°C	Cast hanger with bolted attachment

4. Shackle Specifications

SHACKLE TYPE	MATERIAL	PIN DIA. (MM)	MAX LOAD (KN)	MAX TEMP
Standard	Forged carbon steel	16 – 25	80 – 200	400°C
Alloy	Cr-Mo alloy	16 – 25	100 – 250	600°C
Stainless	AISI 310	16 – 25	80 – 200	1050°C
Heat-Resistant	Cast alloy	20 – 30	150 – 350	1200°C

5. Chain Length & Sag Calculation

For garland hanging: Chain length = $\sqrt{(\text{Span}^2 + (4 \times \text{Sag}^2))}$

SPAN (M)	RECOMMENDED SAG (M)	CHAIN LENGTH (M)
1.0	0.12 – 0.15	1.02 – 1.03
1.5	0.15 – 0.23	1.52 – 1.55
2.0	0.20 – 0.30	2.03 – 2.06
3.0	0.30 – 0.45	3.05 – 3.10

SYSTEM DESIGN

Total chain count = (Kiln circumference × chain rows per section) ÷ chain length per loop. Add 5% for adjustments and spares.

KILN CHAIN SYSTEM SUPPLY

Uniking Canada provides complete kiln chain systems — chains, hangers, and shackles.
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