

SHARP TOP CHAIN SELECTION GUIDE

Application-based chain selection guide covering lumber, corrugated board, package handling, and waste sorting applications.

This guide assists in selecting the correct sharp top chain for specific applications. Chain selection depends on product type, conveyor angle, speed, environment, and load requirements.

1. Application Matrix

APPLICATION	RECOMMENDED STYLE	PITCH RANGE	KEY CONSIDERATIONS
Lumber – green/wet	D-3 (triple point, high grip)	3/4" – 1-1/2"	Aggressive grip needed for wet surfaces, corrosion-resistant pins
Lumber – dry/planed	D-2 (double point, medium)	3/4" – 1-1/2"	Standard grip, carbon steel acceptable
Corrugated board	V-1 (single V-tooth)	1/2" – 1"	Penetration without damage, smaller teeth
Package handling – flat	R-1 (rounded, low profile)	3/8" – 3/4"	Gentle grip, quiet operation
Package handling – incline	V-2 (double V-tooth)	1/2" – 1"	Extra grip for angled conveyors
Waste sorting	S-1 (serrated, aggressive)	3/4" – 2"	Heavy-duty, abrasive environment, hardfaced teeth
Food/light product	F-1 (flat with ridges)	3/8" – 5/8"	Sanitary, easy to clean, stainless or polymer

2. Selection Factors

Conveyor Angle

0° – 5° (horizontal)	Any style suitable – choose based on product surface
5° – 15° (slight incline)	D-2 or V-1 minimum – teeth prevent product drift
15° – 25° (moderate incline)	D-3 or V-2 – aggressive grip required
25°+ (steep incline)	S-1 or D-3 with cleats – consult Uniking engineering

Speed Considerations

0 – 50 ft/min	Any pitch suitable
50 – 150 ft/min	3/8" – 1" pitch preferred for smooth engagement
150 – 300 ft/min	1/2" – 3/4" pitch, ensure sprocket has 12+ teeth

300+ ft/min	Consult Uniking engineering for high-speed applications
-------------	---

Environmental Factors

Dry, indoor	Carbon steel with standard pins
Humid / washdown	Stainless steel chain and pins
Corrosive (salt, chemical)	Stainless 304 or 316, sealed pins
High temperature (up to 400°F)	Heat-treated carbon steel, high-temp lubricant
Abrasive (sand, dust)	Hardfaced teeth, sealed pins, frequent inspection

3. Load Calculation

Required chain pull (lbs) = (Product weight per ft × Conveyor length × Friction factor) + (Chain weight per ft × 2 × Conveyor length × Chain friction)

TYPICAL FRICTION FACTORS

Steel-on-steel wear strips: 0.33 | UHMW wear strips: 0.15 | Product-on-chain (dry): 0.30 | Product-on-chain (wet): 0.15

4. Sprocket Selection Rules

- Minimum 9 teeth for slow-speed applications (under 50 ft/min)
- Minimum 12 teeth for standard applications
- Minimum 15 teeth for high-speed applications (over 150 ft/min)
- Replace sprockets when replacing chain — worn sprockets will destroy new chain
- Match sprocket pitch exactly to chain pitch
- Hardened-tooth sprockets recommended for abrasive environments

NEED HELP SELECTING?

Provide your application details and Uniking Canada will recommend the optimal chain, sprocket, and wear strip combination.

info@unikingcanada.com

