



# **RAIL CUTTING SOLUTIONS**







# RAIL CUT



Think safe

Act safe

Be safe

## SAFETY IN YOUR ENVIRONMENT

Rail applications require the highest safety standards where abrasives are used in the toughest environments and under time pressure. Worker safety is one of Saint-Gobain's top priorities so Flexovit products comply with all expectations of Australian health, safety and environmental standards. **FEPA**, the Federation of European Producers of Abrasives, is dedicated to the promotion of safety in the use of abrasives and is actively involved in the preparation and implementation of the European (EN) and International Standards (**ISO**) for Abrasives and Grinding machines. Flexovit products also adhere to the global safety standard 'oSa', the Organisation for Safety of Abrasives who pursues, in close collaboration with **FEPA**, the objectives of supporting both the currently attained safety standards for abrasive products and their further developments.



THE INTERNAL TESTING AND  
CERTIFICATION IS BASED ON  
THE FOLLOWING STANDARD:

- Safety requirements for Cutting-off wheels (EN12413).



# WHAT SPECIFICATION WHEEL DO I USE?

## HARD RAIL vs SOFT

Metal used for railroads, commonly known as train track steel, bears the weight and dynamic load of the train. The rail is subject to extreme conditions. This comes not only from the traffic that runs on the track, but weather conditions can also play a part in the wearing of the rail.

Train tracks are constantly monitored for wear, as the safety of the train, cargo and most importantly people travelling along its length must not be compromised.

Railway track ranges in hardness. Below is a summary of the typical track weight and hardness of railway track found in Australia

PRODUCT	TENSILE STRENGTH	SURFACE HARDNESS
Plain carbon is suitable for most network and light freight rail applications	MPA	HB
47kg Rail	800-850	260
50kg Rail	800-850	260
NZR50kg Rail	950-1000	280-300
53kg Rail	800-850	280-300
60kg Rail	800-850	280-300
68kg Rail	800-850	280-300






PRODUCT	TENSILE STRENGTH	SURFACE HARDNESS
Head hardened rail has a hardened head to give it better durability and stability for heavy load and tight radius curves	MPA	HB
50kg Rail	1100-1150	300-350+
NZR50kg Rail	1100-1150	300-350+
53kg Rail	1100-1150	300-350+
60kg Rail	1100-1150	300-350+
68kg Rail	1100-1150	300-350+

Once the damaged railway track has been identified and a repair is needed, one of the first steps of the repair is the cutting of the rail track.

The question of “what wheel do I use for which hardness” comes next.

Just like railway track, wheels come in multiple specifications. These also range from Soft to Hard.

The explanation of a Flexovit Thin Wheel speciation is below.

PRODUCT SPECIFICATIONS										
A		36			S		BF		41	
ABRASIVE TYPE		GRIT SIZE			HARDNESS GRADE		BOND TYPE		PROFILE TYPE	
		Fine	Medium	Coarse	Soft	Medium				
A = Aluminium Oxide	80	30		16	N	Q	T	B = Bakelite/Resinoid Bond BF = Bakelite & Glass Fibre Reinforcement	See below	
C = Silicone Carbide	to	to	to		O	R	U			
Z = Zirconia Alumina	100	60	24		P	S	V			
Type: 41	Type: 42			Type: 27		Type: 28		Type: 29		
										



To make it simple, the opposite grade of wheel is needed

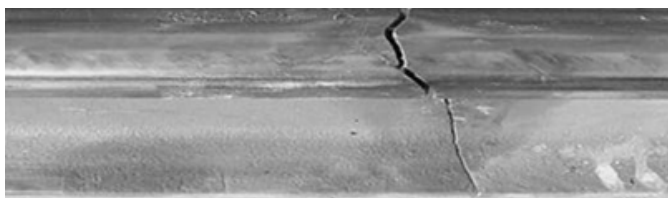
Soft Rail (260HB or below) = Medium / Hard

Hard Rail (260 HB or above) = Soft / Medium

If you were to use a Soft grade wheel on Soft rail, the wheel would not give the life (number of cuts) you would expect.

The wheel would wear very quickly, in turn if you were to use a hard wheel on a hard rail, the wheel would be slow to cut the material and would most likely “glaze” the surface of the abrasive wheel and no longer cut the rail.

If the hardness of the rail is in question, the best option is to use a medium grade specification as this will work well on both Soft and Hard railway track .



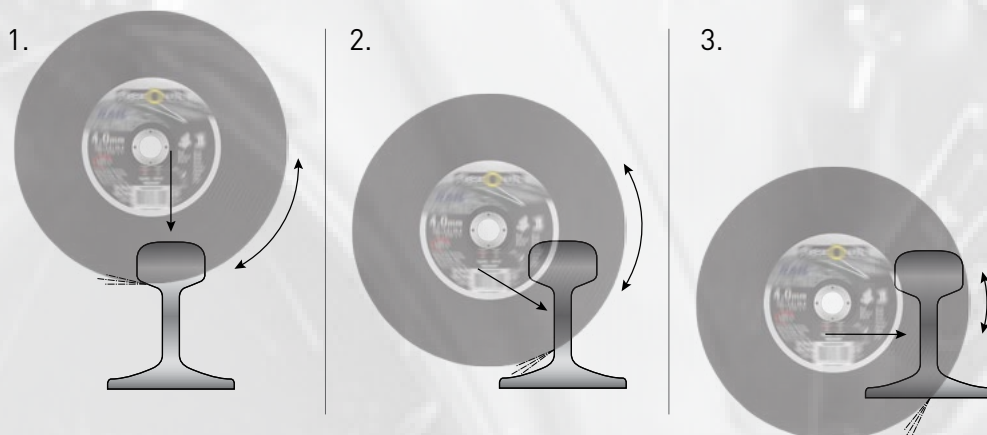
Typical railway track damage



# CUTTING ACTION WITH A SAW MOUNTED ON A RAIL CLAMP

## CUTTING

Arrange the workpiece so that a uniform section can be cut



### KEY:

Direction of cut

Oscillate the wheel, swing the machine for quickest & cleanest cut

The Rail cut-off wheel line consists of Type 41 straight 350-406mm diameter wheels, designed to fit on petrol & pneumatic power saws that are mounted on a rail track clamp.

The primary applications is for cutting rail track.

The Flexovit rail cutting range is suitable for hard, medium and normal rail hardness.



### Rail Cutting - Hi-Speed (100m/s) portable cut-off saw (Soft)

- A24P Aluminium oxide coarse grit
- Ideally designed for extremely hard rail >60kg head hardened
- Durable resin bond designed for fast cut while retaining excellent wheel life



#### Rail Track Steels

SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
356 x 4.0 x 25.40	5,500	10	66252920156	9314188005735	"High performance wheels for hard rail track cutting"
406 x 4.0 x 25.40	4,800	10	66252920164	8711479338250	

### Rail Cutting - Hi-Speed (100m/s) portable cut-off saw (Medium)

- A24Q Aluminium oxide coarse grit medium hardness
- Ideally suited for all rail hardness specifications. A proven performer from light rail through to heavy rail applications
- Durable resin bond designed for fast cut while retaining excellent wheel life



#### Rail Track Steels

SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
356 x 4.0 x 25.40	5,500	10	66252832796	9314188005704	"High performance wheels for all track cutting applications"
406 x 4.0 x 25.40	4,800	10	66252832954	9314188077510	

The Rail cut-off wheel line consists of Type 41 straight 350-406mm diameter wheels, designed to fit on petrol & pneumatic power saws that are mounted on a rail track clamp.

The primary applications is for cutting rail track.

The Flexovit rail cutting range is suitable for hard, medium and normal rail hardness.



**Rail Cutting - Hi-Speed (100m/s) portable cut-off saw (Hard)**

- A30Q Aluminium oxide medium grit with harder bond
- Ideally designed for light rail <47kg
- Durable resin bond designed for fast cut while retaining excellent wheel life

Rail Track Steels

SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
350 x 3.8 x 20.00	5,500	10	66252841631	9314188016298	"High performance wheels for soft rail track cutting"
350 x 3.8 x 25.40	5,500	10	66252841632	9314188016373	



**Rail Cutting - Hi-Speed (100m/s) portable cut-off saw (Hard)**

- ZA24Q - Aluminium oxide/Zirconia blend coarse grit medium hardness
- Ideally designed for light rail <47kg
- Durable resin bond designed for fast cut while retaining excellent wheel life

Rail Track Steels

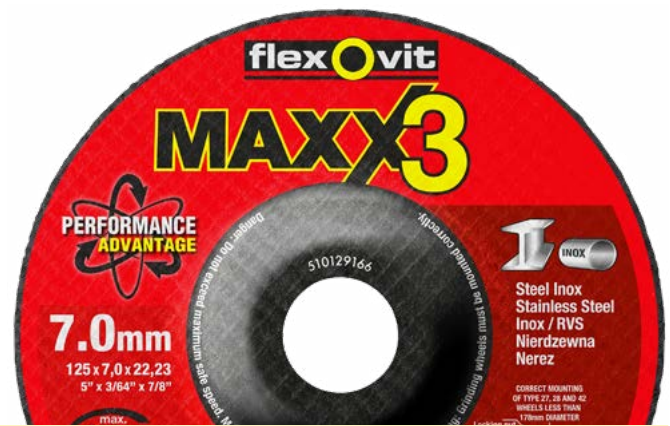
SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
406 x 4.0 x 25.40	4,800	10	66252841634	9314188135180	"High performance wheels for soft rail track cutting"





An extremely comfortable and efficient grinding solution for all demanding hard metal fabrication applications.

The Ceramic grain helps maintain a consistently high stock removal, even on hard alloy steels, maximizing productivity.



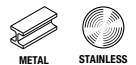
### MAXX3 - Performance Advantage Grinding (Type 27 Depressed Centre)

- NQ24P - Ceramic grain
- Superior depressed centre grinding wheel, for exceptional stock removal
- For stainless steel, alloy steels, cast iron, tool steel & hard ferrous metals
- Durable resin bond designed for grinding while retaining excellent wheel life
- Fillers free of Iron, Sulphur & Chlorine



30°

Stainless steel, alloy steels, cast iron, tool steel & hard ferrous metals



SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
115 x 7.0 x 22.23	13,300	10	66253371494	8711479944277	"Maxx operator comfort, Maxx metal removal, Maxx wheel life"
125 x 7.0 x 22.23	12,250	10	66253371495	8711479944284	
180 x 7.0 x 22.23	8,500	10	66253371497	8711479944307	
230 x 7.0 x 22.23	6,650	10	66253371498	8711479944314	

Flexovit Maxx™ contains a blend of premium zirconia and aluminium oxide grain, with patented bond system designed to optimize your output without costly tool change over time.

The 7.0mm thick range have extra reinforcement to ensure safe operating on all rough heavy duty applications and are compatible with high frequency angle grinders.



### MAXX™ - Zirconia Grinding (Type 27 Depressed Centre)

- ZA24Q - MAXX™ using premium Grade NorZon® Plus grain
- Excellent depressed centre grinding wheel, formulated for high frequency grinders
- For stainless steel, alloy steels, cast iron, tool steel & hard ferrous metals
- Durable resin bond designed for grinding while retaining excellent wheel life
- Fillers free of Iron, Sulphur & Chlorine



30°

Stainless steel, alloy steels, cast iron, tool steel & hard ferrous metals



SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
115 x 7.0 x 22.23	13,300	10	66252842311	8711479577239	"Maxx Wheels offer high performance and excellent results in demanding technical applications."
125 x 7.0 x 22.23	12,250	10	66252842312	8711479577246	
230 x 7.0 x 22.23	6,650	10	66252844525	8711479580642	

Designed with aluminium oxide grain for general purpose metal grinding.

The depressed centre design allows the flange/lock nut to recess within the wheel so that it can be used for various grinding applications.

Depressed centre wheels are designed to handle the most severe right angle grinding applications from heavy stock removal to rough blending.

The depressed centre wheels may also be referred to as raised hub wheels.



### General Purpose - Grinding (Type 27 Depressed Centre)

- A30P Aluminium oxide grain
- Excellent depressed centre grinding wheel, for fast stock removal
- For steel & hard ferrous metals
- Durable resin bond designed for grinding while retaining excellent wheel life



Steel & hard ferrous metals



SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
125 x 6.8 x 22.23	12,250	50	66253371101	9314188140191	"High performance general purpose grinding wheel"
180 x 6.8 x 22.23	8,500	25	66252841697	9314188061496	
230 x 6.8 x 22.23	6,650	10	66252841699	9314188061731	

### General Purpose - Grinding (Type 27 Depressed Centre)

- A30T Aluminium oxide grain
- Excellent depressed centre grinding wheel, for fast stock removal
- For steel & hard ferrous metals
- Durable resin bond designed for grinding while retaining excellent wheel life



Steel & hard ferrous metals




SIZE (mm)	MAX. RPM	PACK QTY	PRODUCT #	BARCODE #	SUMMARY
125 x 4.5 x 22.23	12,250	50	66252841681	9314188060314	"High performance general purpose grinding wheel"
125 x 6.8 x 22.23	12,250	50	66252841682	9314188060352	
180 x 4.5 x 22.23	8,500	40	66252841688	9314188060574	
180 x 6.8 x 22.23	8,500	25	66252841689	9314188060611	
230 x 4.5 x 22.23	6,650	40	66252841694	9314188060741	
230 x 6.8 x 22.23	6,650	10	66252841695	9314188060796	





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**AUSTRALIA**  
**SAINT-GOBAIN ABRASIVES PTY. LTD.**  
60 Hume Hwy, Somerton, VIC 3062,  
Toll Free: 1300 007 650  
sales.au@saint-gobain.com  
**SAINT-GOBAIN.COM.AU**

**NEW ZEALAND**  
**SAINT-GOBAIN ABRASIVES LTD.**  
70 Wharf Rd, Te Atatu Peninsula, AK 0610,  
Toll Free: 0800 74 24 24  
sales.nz@saint-gobain.com  
**SAINT-GOBAIN.CO.NZ**

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