

MICRO ALLOY WHEELS

- High axle loads - 40+ tonnes
- High hardness
- Superior wear resistance
- Improved fracture toughness
- Superior resistance to surface and subsurface Rolling Contact Fatigue
- Improved resistance to spalling



Comsteel is at the forefront in the development of products for higher axle load applications.

New materials and designs for specific applications such as high hardness and wear resistant wheels have been developed by Comsteel.

Comsteel Micro Alloy wheels utilise the addition of micro alloying elements to improve the wheels properties.

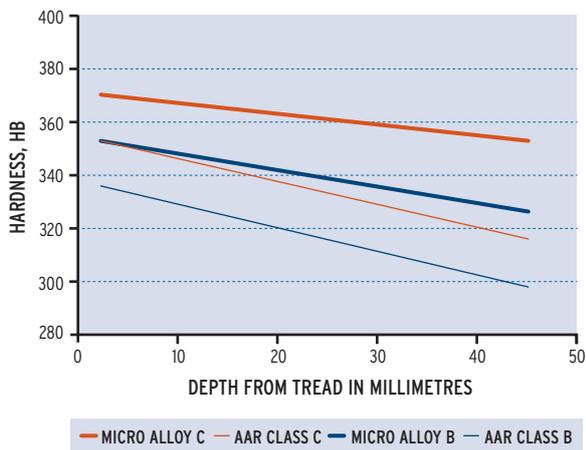
Micro Alloying technologies allow an increase in hardness without increasing the carbon level there by not compromising on the wheels thermal susceptibility.

In addition to reduced wear through harder materials, Comsteel Micro Alloy wheel materials offer improvements in fracture toughness and resistance to rolling contact fatigue through improved yield and tensile strength.



In excess of 1/4 million micro alloy wheels in service

TYPICAL HARDNESS TRAVERSE FOR SELECT GRADES



| Grade | Rim Hardness | Typical Material Properties | | |
|---------------|--------------|-----------------------------|-----------|--|
| | | YS (MPa) | UTS (MPa) | Fracture Toughness (MPa.m ^{0.5}) |
| Micro Alloy C | 341 - 388 HB | 855 | 1240 | 47 |
| AAR Class C | 321 - 363 HB | 760 | 1150 | 41 |
| Micro Alloy B | 321 - 363 HB | 790 | 1150 | 62 |
| AAR Class B | 302 - 341 HB | 670 | 1050 | 53 |



Comsteel Micro Alloy B

Comsteel Micro Alloy B wheels were developed early 1990's for high speed passenger transportation.

Comsteel Micro Alloy B wheels are typically used where higher hardness is desirable and with heavier braking applications, where higher carbon Class C materials are not suitable.

Over 20 years service in Australia and internationally without any critical failures. In excess of 60,000 wheels in service.

Used extensively on passenger, locomotive and freight applications.



Comsteel Nuvan

In addition to the Micro Alloy wheels Comsteel manufacture a "Nuvan" range of products which feature high fracture toughness resulting in greater resistance to brittle fracture and therefore improved wheel safety.

The Nuvan wheel has been developed in two grades to meet the chemical composition and hardness requirements of both AAR M 107 class B and class C.

The Nuvan B wheel material is typically used for locomotives in heavier braking applications and harsh operating environments.

The Nuvan C material is typically used for locomotives in moderate to light braking applications and for passenger vehicles with non-tread braking.

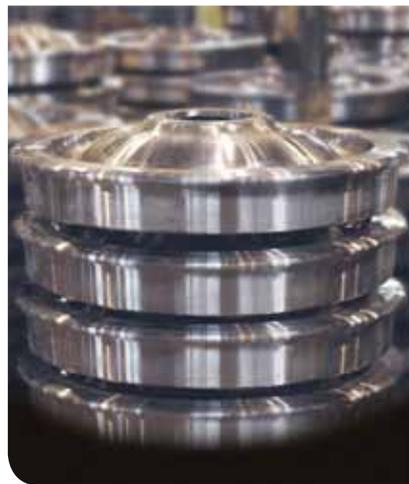
Comsteel Micro Alloy C

The Micro alloy wheel has been developed in two grades.

Comsteel Micro Alloy C wheels are typically used where higher hardness is desirable with higher axle loads and with moderate braking applications.

Comsteel's Micro Alloy C wheel have been proven in service for over 25 years.

Used in Heavy Haul coal and iron ore haulage and locomotive applications.



Local supplier of choice to the Australian Heavy Haul Industry

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DETAILS

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we have the capabilities
to export globally.