

Xlerplate® steelintouch

News for XLERPLATE® steel customers

ISSUE 12 | SPRING 2008

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Hello everybody and welcome to the first national edition of XLERPLATE® Steel In Touch.

In late 2007, we surveyed our readership and sought suggestions from you on how we might improve Steel in Touch. We had an excellent response to the survey and one of the main opportunities for improvement we discovered, was to increase the scope of the newsletter to include content that was not confined to what was happening in specific states.

Based on your feedback, we have re-shaped Steel In Touch to give it a national focus so readers have access to a much broader selection of stories and information. There is certainly a lot going

on in the Australian market right now, which means there is a lot of relevant information we want to communicate to you through the newsletter. We hope that our new and improved newsletter satisfies your needs for information about XLERPLATE® steel and its applications.

It has certainly been a challenging year for our industry. The global market for steel has been very buoyant, based on robust consumption in the developing world and generally strong economic activity in major steel consuming markets. Consistent with the global situation, Australia has also experienced strong demand for the full range of steel products.

We have seen unprecedented demand for XLERPLATE® during this period and we have increased our production output and worked our supply chain hard in an endeavour to satisfy the needs of our customers. Our customers are our focus and we remain committed to supplying as much XLERPLATE® steel as we possibly can to the Australian market.

I would like to take this opportunity to thank our customers for their continued support during this challenging period.



In addition to the revamped Steel in Touch newsletter, we have undertaken two other new and exciting initiatives to support our XLERPLATE® customers. We are about to launch the new, comprehensive XLERPLATE® Product Information book and updated training DVD.

These will be on show at our XLERPLATE® display at the Australian Steel Convention on September 14-16 in Perth.

I hope you enjoy this edition of Steel In Touch.

Bernie Landy

General Manager Industrial Markets
BlueScope Steel

Bernie.Landy@bluescopesteel.com

Steel: a global perspective

Steel market fundamentals both in Australia and internationally are driven by global factors over which individual steel producers have limited control. This has ramifications not only for the steel industry, but for the whole Australian economy, as steel literally provides a backbone for growth in sectors such as mining, engineering, construction and manufacturing.

In the first half of 2008, the steel market experienced:

- A shortage of key raw materials and related raw material cost increases
- Record high ocean freight rates which increased the costs of inter-regional trade
- Strong demand in emerging markets such as India and China, which led to a global steel shortage

This combination of factors resulted in steel prices reaching record high levels in all major regions.

More recently, however, steel prices have corrected on the back of slowing demand in the northern hemisphere, caused by the seasonal slowdown in Europe and the Middle East. However, this correction has not been reflected in imports into Australia due to the softening AUD. Meanwhile, a combination of poor weather conditions and the Beijing Olympics has slowed construction activity in China.

A slowing global economy is also likely to impact the level of steel demand in the second half of 2008. The outlook for emerging economies remains sound, which consume about 60% of global steel production. In the three months to July 2008, industrial production

growth in China has averaged close to 16% per annum with 5% growth in India.

Supply shortages of key raw materials (e.g. coking coal and iron ore) constrained crude steel production in most regions in the first half of 2008. The Queensland floods from earlier this year contributed to this situation, leading to reduced coal output which impacted supply to major steelmakers in Europe, Japan and India.

Due to supply constraints and strong demand, raw material markets have seen record contract values for hard coking coal and iron ore (refer to Raw Material Prices chart).

For the 2008/09 contract year, coking coal prices jumped by 200% compared to the year prior and are now over USD300 per tonne.

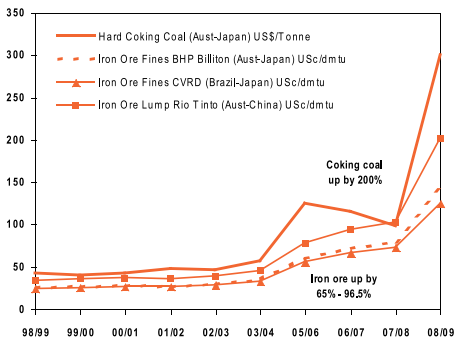


XLERPLATE® steel used in the manufacture of rail wagons for EDI Rail.

In February, multi-national mining company Vale (the world's largest producer of iron ore) announced a 65% price rise in iron ore fines, an increase which has now been surpassed by Rio Tinto and BHP Billiton. Both companies secured a 79.8% rise for iron ore fines and a 96.5% rise for lump ore.

RAW MATERIALS PRICES

Source: Steel Business Briefing



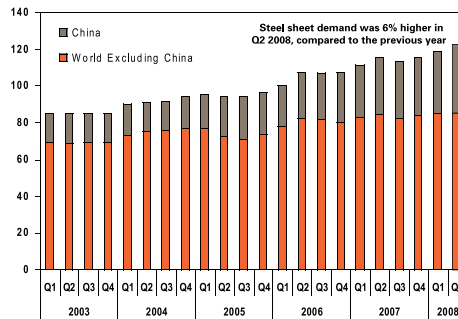
In addition, Chinese steel production has been impacted this year due to difficulty with port and rail logistics, restricting access to coking coal and iron ore.

Despite these constraints, global crude steel production reached 815m tonnes in the first seven months of 2008, up by 6.1% compared to the same period in 2007. The global supply/demand balance for steel remains tight, with steel demand remaining robust, especially in emerging markets.

According to CRU International, steel sheet demand was 6% higher in the second quarter of 2008, compared to the same period last year (refer to Steel Sheet Consumption chart). This resulted in steel buyers competing for supply and placing upward pressure on steel prices.

STEEL SHEET CONSUMPTION – MILLION METRIC TONNES

Source: CRU International



The supply/demand balance was particularly tight in China. This was exacerbated by the Sichuan earthquake which occurred in May and resulted in a short term spike in demand for galvanised sheet products used in the construction of emergency shelters, further pushing prices upward.

With regard to the global plate situation, robust activity in key end-use sectors has resulted in further acceleration in demand in the past few years, driving strong price growth:

- Shipbuilding demand has soared due to the increase in global trade of many commodities.
- Investment in infrastructure and capital equipment has been boosted by sustained economic growth, particularly in the developing world.

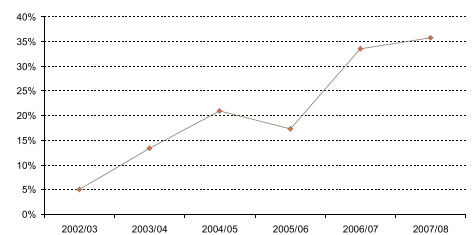
Constraints in steel production have limited China's ability to export, adding to the effects of export taxes and high freight rates. During the first half of 2008, Chinese net exports of finished steel were 26% lower compared to the first half of 2007.

There is no doubt that China continues to be the most influential player in the world steel scene. The balance of global supply and demand going forward will be dependent on the extent to which China adds additional capacity. India is also becoming a significant force, and the expectations are that India will substantially increase its capacity, albeit from a low base.

BlueScope Steel, Australia's largest manufacturer of steel products, including XLERPLATE® steel, has been steadily increasing the volumes it produces for a number of years (refer to Pattern Plate Production chart). Consistent with the global situation, Australia has also been experiencing stronger than expected demand and consequently supply/demand imbalances.

BlueScope Steel is maximising its production output and getting the most out of its supply chain in an endeavour to meet customer demand. Domestic customers are our focus and we remain committed to supplying as much XLERPLATE® steel as we possibly can to the Australian market.

PLATE PRODUCTION: CUMUL. % CHANGE



By Bernie Landy
General Manager Industrial Markets



South Australia is forecast to require \$25 billion in infrastructure spending in the next decade to support plate-intensive mining and deep-sea port expansions, such as that forecast for BHP Billiton's Olympic Dam mine (pictured).

SA mining infrastructure set to boom

South Australia will require \$25 billion to be spent on infrastructure over the next decade on deepwater ports, regional roads, rail connections, power plant, water, communications facilities, and more, according to a South Australian Chamber of Mines and Energy report authored by the Connell Wagner Infrastructure Consortium*.

Professor Richard Blandy from the Consortium said South Australian mining infrastructure spending over the next 20 years could amount to \$10 billion and open the way to a Western Australian-like mining boom.

"The impending demand in South Australia is staggering," he said. "The dominating force will be the BHP Billiton Olympic Dam mine, which is set to become one of the world's biggest open-cut mines.

This will be pivotal in influencing infrastructure decisions impacting South Australia's mining fraternity and a whole range of other projects coming on stream. In turn this will require infrastructure rivaling the needs of the Olympic Dam expansion."

Connell Wagner Principal and Consortium member Ron Ely said the development of shared, base engineering infrastructure was vital for the economically successful transition of many of the state's early exploration finds into operating mines.

"In order to more effectively progress future government and private sector development, the Consortium is still creating the necessary data capture, strategic planning and coordination mechanisms," Mr Ely said.

SIGNIFICANT AMOUNTS OF STEEL

SCM Advisory Principal and Consortium member Scott McKay said the projected infrastructure expansion would naturally involve significant amounts of steel construction.

"Logically, a substantial amount of steel infrastructure will be involved in the overall expansion.

"The steel industry will contribute a diverse range of materials including steel plate for fabricating mining assembly operation and storage containers, desalination plants, deep sea ports, and potentially a power station."

Mr McKay said the infrastructure expansion could result in South Australia retaining entire manufacturing processes.

"It's a brilliant opportunity for South Australian business. The challenge for the local industry is to be able to manufacture quality products and provide specialised structures and integrated fabrication services. Mining companies will be looking at integrated solutions, not just buying steel," Mr McKay said.

The South Australian government has formed the Resources and Energy Sectors Infrastructure Council (RESIC) in response to the study's preliminary findings and recommendations.

OneSteel Whyalla Steelworks Business Sustainability General Manager and RESIC Member, Jim White, said RESIC has recommended the state government take action to support mining industry infrastructure by initially focusing on road access and ports development.

* The Consortium is led by University of South Australia economist Professor Richard Blandy; Scott McKay, Advisory Principal of supply chain and infrastructure specialist SCM Advisory; and Ron Ely, Resource Sector Development Manager for Connell Wagner in SA.

Understanding XLERPLATE® steel's supply condition – part one

Understanding the conditions in which XLERPLATE® steel is supplied is critically important for all those involved in its use, fabrication, ordering and distribution. Using steel plate with appropriate mechanical properties – such as strength, toughness and hardness – for specific jobs, each of which will have its own unique challenges and needs, means lower costs and more effective outcomes.

Various plate standards, domestic and international, specify or provide a range of alternatives for the supply condition of steel plate. This article provides an overview of factors impacting the various supply conditions of hot rolled steel, as well as implications for the customer when choosing XLERPLATE® steel.

XLERPLATE® STEEL SUPPLY CONDITIONS

Four typical supply conditions are:

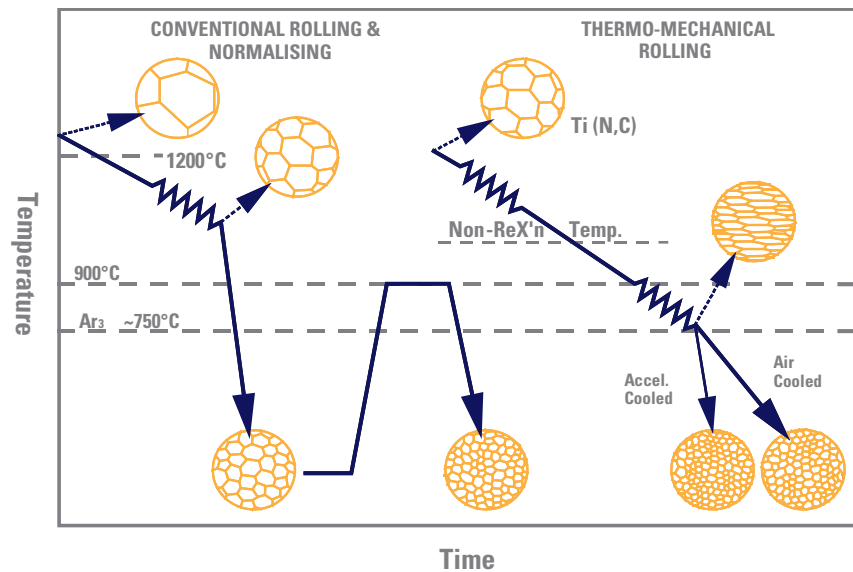
- As Rolled
- Normalised
- Normalised Rolled
- Thermo-mechanical Controlled Rolled

When discussing XLERPLATE® steel supply conditions, it helps to have a basic understanding of steel metallurgy as it relates to the plate rolling process. How steel is rolled affects the mechanical properties of the final plate. This is shown schematically above.

AS ROLLED CONDITION

When a steel slab is reheated in a reheat furnace (~1200-1250°C), the steel forms a structure referred to as austenite. The effect of rolling on austenite and the change from austenite to other structures (such as ferrite and pearlite), during the rolling process, significantly affects the properties of the steel.

The slab begins to cool when it exits the furnace and is rolled. In the early stages of rolling the temperature remains high and the deformation of the slab leads to new grains of austenite forming and growing within the existing austenite structure. This occurs by a process known as recrystallisation and grain growth. The deformation occurs as a result of the rolling.



The structure at this stage is one of coarse austenite. When this plate cools to room temperature it results in a microstructure of fairly coarse grained ferrite and pearlite which gives average strength and toughness. This process is generally known as hot rolling.

THERMO-MECHANICAL CONTROLLED ROLLED

If the steel has micro-alloying elements such as niobium, titanium, vanadium or aluminium added, there is a point during rolling where the austenite no longer recrystallises but remains in a deformed condition. This is known as the non-recrystallisation temperature. The micro-alloying elements help retard recrystallisation and grain growth. This leads to a finer ferritic grain size and helps improve strength and toughness.

If rolling is carried out below the non-recrystallisation temperature, but usually above the A₃ (the temperature where the austenite starts to transform into ferrite), the structure at the end of rolling consists of fine 'pancake' shaped grains of deformed austenite. Some rolling may also take place just below the A₃ temperature to give optimal strength and toughness.

On cooling to room temperature, the large surface area of the pancaked grains allow for a lot of ferrite nucleation sites and as such gives a fine grained ferrite/pearlite microstructure which is both strong and tough.

This process is known as Thermo-mechanical Controlled Rolling (TMCR).

Some steel manufacturers employ water spray cooling after rolling in a process known as accelerated cooling, alternatively known as Thermo-mechanical Controlled Processing (TMCP) – TMCR and TMCP are terms used interchangeably. This usually results in very fine ferrite/pearlite microstructure giving excellent strength and toughness.

Part two of this article will be published in the summer edition of XLERPLATE® Steel In Touch and will discuss the remaining plate supply conditions; Normalised and Normalised-Rolled.

By John Dryden

National Technical Manager Uncoated BlueScope Steel

DID YOU KNOW?

■ John Dryden is the National Technical Manager Uncoated, of BlueScope Steel. His technical expertise is applied to XLERPLATE® hot rolled plate steel, manufactured to tolerances that conform to Australian Standards and ISO 9001 International Quality Standards.

Major Metals Queensland has constructed two gigantic steel caissons (below) from Grade 350 XLERPLATE® steel for the Tugun desalination plant.

Desalination plant: something to drink to

Major Metals Queensland has constructed large steel caissons, pivotal to the Gold Coast desalination project being built at Tugun.

Desalination works by separating salts from seawater using a reverse osmosis process. The new plant will produce 125 megalitres of drinking water per day by January 2009.

Major Metals Queensland manufactured two steel caissons for the GCD Alliance (the company commissioned to deliver the project). These will be used for the intake riser that collects seawater and the outlet riser that disperses the brine.

Both pipes were made from Grade 350 XLERPLATE® steel in 36mm, 40mm and 50mm thicknesses, and constructed in segments before being welded together and encased in concrete.

MANUFACTURED IN SECTIONS

The intake riser dimensions are 3100mm in diameter and 66 metres long and it is manufactured in three sections of six, 24 and 36 metres. The outlet riser is shorter and manufactured in two sections of 18 metres and 36 metres.

"Our involvement with this infrastructure project was to use XLERPLATE® steel because it was an easily available material and fitted our design brief," said Major Metals Queensland General Manager, Ina Hirovanaa.

"Transport by Boom Logistics of these steel casings from Dalby to Pinkenba in Brisbane caused a bit of drama, especially travelling down the Toowoomba Range. They weighed up to 115 tonnes, so progress was slow and methodical."

BY BARGE

The caissons were then barged from Brisbane to Tugun and dropped into 20 metres of water around 1.5 kilometres off the coast, before being driven 40 metres into the ocean floor by a 100-tonne piling hammer. From there, the intake riser is connected to the desalination plant via a 2.8 metre tunnel which has been excavated around 40 metres below the sea bed.

The reverse process will apply to the outlet riser and tunnel.

MORE TO FOLLOW

In light of the continuing drought, the Queensland Water Commission has announced a range of measures for the state's water supplies, including a proposal for six more desalination plants.

It is predicted that almost one-third of south-east Queensland's water supply could come from recycled water and desalination plants within 50 years.

XLERPLATE® steel – just the ticket to win

XLERPLATE® steel customer Raymond Bertazzo never seriously considered winning a trip to Spain when he entered last year's 'Backing the Aussie Spirit' campaign. But he and wife Trudie were soon sunning themselves in Valencia after Bertazzo Engineered was drawn as a grand prize winner.

The 'Backing the Aussie Spirit' campaign promoted XLERPLATE® steel's quality, technical back-up, sales support and Australian-made qualities.

"I've been an XLERPLATE® steel customer for 11 years and purchasing BlueScope Steel products for over 20 years, but I never expected it would have anything to do with an overseas holiday," Mr Bertazzo said.

In Spain the Bertazzos watched the Swiss yacht Alinghi win the 32nd America's Cup yacht race and experienced many other highlights.

"The food and wine were excellent and we did a lot of touring. The beaches were beautiful.

"On Spain's version of the autobahn we were fl at out on a Vespa and had trucks whizzing past us at 140km/h – it was like something out of Mr Bean."

Bertazzo Engineered processes in excess of 200 tonnes of XLERPLATE® steel annually, specialising in laser-cutting and fabrication. "We work to exacting standards so the quality of our material is paramount.

"We choose XLERPLATE® steel mainly for its excellent consistency," Mr Bertazzo said.



The wagon train for more steel



In order to help meet demand for steel locally, Pacific National, upon request by BlueScope Steel, is adding five new purpose-built tilt wagons to their fleet early in 2009.

This increase in the available number of tilt wagons is reflective of the overarching BlueScope Steel strategy to improve its ability to meet local steel demand.

“By adding these new wagons to our current fleet, we will now be able to dispatch over 450,000 tonnes of XLERPLATE® steel out of the plate mill each year,” said Nigel Attwell, Customer Service Manager, Strip & Plate.

“Pacific National has been commissioned on behalf of BlueScope Steel to build these new tilt wagons,” continued Nigel. “The addition of



the new wagons to the 50 wagon-strong fleet will increase the dispatch capacity for wide plate by up to 17,000 tonnes per year, with each wagon designed to carry 65 tonnes of XLERPLATE®.”

RPG Australia secures Capital Wind Farm contract

RPG Australia has secured a contract to manufacture wind towers for the Capital Wind Farm at Lake George in New South Wales.

The Capital Wind Farm is an expansive undertaking, with an overall capital value in excess of \$300 million.

Leading international wind energy company Suzlon Energy Australia awarded RPG Australia the contract to manufacture 43 wind towers.

The giant wind towers must be sturdy enough to withstand huge wind gusts of up to 210km/h and are built to precise international standards using finest-quality materials.

RPG Australia will use over 6500 tonnes of Grade 350 XLERPLATE® steel in the construction of the towers, which when finished will stand approximately 80 metres high with a base diameter of 4.3 metres.

The towers will be manufactured in four sections, then fully blasted and painted. They are fitted with platforms, cables and ladders before being transported by road to Lake George.

RPG Australia, which acquired wind tower specialists Air Ride Wind in 2006, has become a leading manufacturer of wind towers. Its Adelaide plant has manufactured and supplied many of Australia's existing wind farms including Starfish Hill, Lake Bonny,

Wattle Point, Hallett, Snowtown, and Cathedral Rocks – many of which have also been constructed using XLERPLATE® steel.

RPG Australia Wind Division General Manager Mike Lewis said RPG Australia has had longstanding success using XLERPLATE® steel in its wind tower construction projects.

“XLERPLATE® steel has proven itself as a first-choice material for our wind tower manufacturing business. It meets our stringent criteria in terms of performance quality. We use steel from BlueScope Steel because it is Australian-made, supports domestic industry and offers flexibility advantages,” Mr Lewis said.

\$20 MILLION INVESTMENT

“We'll be working closely with BlueScope Steel to meet Sulzon's exacting standards and to manufacture the towers on time.

“To fulfill the Capital Wind Farm contract, RPG Australia will require an investment of approximately \$20 million to expand its facility in Dalby, Queensland, which will result in a major boost for the local economy.” Mr Lewis said this would create up to 45 long-term skilled jobs for Dalby.

“This project has had positive implications for a number of different regions,” Mr Lewis said.



“Wind energy is a growing global market. We are now seeing the signs of sustained growth in investment in wind power in Australia. This is particularly exciting for us – and we are positioning ourselves to take up the challenges of this clean energy market segment.”

When complete, the wind farm will be capable of generating in excess of 400,000-megawatt hours per year of electricity without any emissions from burning fossil fuels. This will offset the equivalent of approximately 390,000 tonnes of CO_{2e} emissions per year.*

*Calculated using the NSW pool greenhouse gas coefficient.

In the hotseat with Barry Duthie



Job title: State Manager OneSteel Steel & Tube SA/NT

No. of years with OneSteel: 18

My role and responsibilities involve: Satisfying customers and ensuring my people don't get injured

My greatest working challenge: Ensuring all my people go home in the same physical condition as they arrived

The most important thing I've learned in business is: Nothing stands still

The secret to success is: Maintaining a balance between home and work

I like steel because: The people are genuine

I start my working day by: Reviewing the day prior

My favourite pastime: Chasing a little white ball around 18 holes

My favourite car: My Ford XR6 turbo

My favourite movie of all time: Rocky I, II, III, IV, V and VI

My favourite food is: Steak Florentine (Only Horsham people will understand)

My earliest childhood memory: I have trouble remembering what I did five minutes ago

My secret talent is: Many say drinking

If I had \$1m to blow it would be on: Ensure all four of my kids' futures were secure

If I could have one person over for dinner, it would be: I'm greedy. I would like to have my wife and four kids

Favourite holiday destination ever: Darwin

XLERPLATE® steel national sales team

NSW/ACT

Matt Hennessy – Regional Sales Manager
Matthew.Hennessy@bluescopesteel.com
02 4275 3314 / 0410 312 113

Phil Burke – Account Manager
Phillip.Burke@bluescopesteel.com
02 4275 3388 / 0411 561 855

Lube Dimovski – Account Manager
Lube.Dimovski@bluescopesteel.com
02 4275 3536 / 0418 297 874

Tony Apps – Account Manager
Tony.Apps@bluescopesteel.com
02 4275 3536 / 0427 223 027

Zoran Sterjovski – Customer Service Officer
Zoran.Sterjovski@bluescopesteel.com
1300 135 004

VIC/TAS

Simon Fieldsend – Regional Sales Manager
Simon.Fieldsend@bluescopesteel.com
03 9586 2324 / 0418 325 836

Adam Cheeseman – Account Manager
Adam.Cheeseman@bluescopesteel.com
03 9586 2282 / 0407 287 817

Maria Gounis – Account Manager
Maria.Gounis@bluescopesteel.com
03 9586 2298 / 0418 386 972

Scott Sheedy – Account Manager
Scott.Sheedy@bluescopesteel.com
03 9586 2273 / 0418 386 964

Peter Panteli – Customer Service Officer
Peter.Panteli@bluescopesteel.com
1300 135 004

QLD

Tony Fotea – Regional Sales Manager
Tony.Fotea@bluescopesteel.com
07 3845 9351 / 0407 751 653

Jamie Cooper – Account Manager
Jamie.Cooper@bluescopesteel.com
07 3845 9394 / 0407 377 355

Rob Bauer – Account Manager
Rob.Bauer@bluescopesteel.com
07 3845 9382 / 0407 544 833

Martin Frylink – Account Manager
Martin.Frylink@bluescopesteel.com
07 3845 9350 / 0427 160 895

Keven May – Customer Service Officer
Keven.May@bluescopesteel.com
1300 135 004

SA/NT

Mike Hesketh – Regional Sales Manager
Mike.Hesketh@bluescopesteel.com
08 8243 7352 / 0419 588 131

Dean Trenwith – Account Manager
Dean.Trenwith@bluescopesteel.com
08 8243 7355 / 0418 840 161

Nathan Squires – Customer Service Officer
Nathan.Squires@bluescopesteel.com
1300 135 004

WA

Elly Pilkadaris – Regional Sales Manager
Elly.Pilkadaris@bluescopesteel.com
08 9365 6665 / 0419 931 605

Monica Macaskill – Account Manager
Monica.Macaskill@bluescopesteel.com
08 9365 6676 / 0448 976 862

Greg Harbour – Account Manager
Greg.Harbour@bluescopesteel.com
08 9365 6650 / 0400 204 893

Nathan Squires – Customer Service Officer
Nathan.Squires@bluescopesteel.com
1300 135 004

For technical enquiries call 1800 800 789

QUIZ: From which movies were each of the following quotes taken?

- "I feel the need – the need for speed."
(a) Independence Day
(b) Speed
(c) Top Gun
- "Oh, they've encased him in carbonite! He should be very well protected, if he survived the freezing process."
(a) Star Wars: Empire Strikes Back
(b) Star Trek
(c) Starship Troopers
- "I'm a cybernetic organism: living tissue over a metal endoskeleton."
(a) Judge Dread
(b) Terminator - Judgment Day
(c) Robo Cop
- "I AM THE NIGHT RIDER!!"
(a) Ghostbusters
(b) Night Rider
(c) Mad Max
- "Manny, look at the pelicans fly. C'mon Pelicans!"
(a) Pelican Brief
(b) Scarface
(c) Storm Boy
- "It belongs in a museum!"
(a) Jurassic Park
(b) Indiana Jones: The Last Crusade
(c) National Treasure



Answers: 1. Top Gun, 2. Star Wars: Empire Strikes Back, 3. Terminator – Judgment Day, 4. Mad Max

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