ESCO®

# Bucyrus Blades™ products

## for mining, construction and aggregate applications

Mining technology for a sustainable future

# Contents

# ESCO® Bucyrus Blades™ alloy overview

Mining, construction and aggregate operations need products to improve machine productivity with less maintenance and are economically viable, regardless of operation size. ESCO's Bucyrus Blades products deliver these requirements with consistent quality and field-proven performance.

ESCO offers a complete line of Bucyrus Blades cutting edges, end bits and blade accessories for all makes and models from small utility class up to the latest mining class machines. Bucyrus Blades products are engineered to provide optimum machine performance and are precision manufactured to ensure the right fit every time.

**MaxTemp® steel**
Our standard premium alloy option, MaxTemp steel is a heat-treated, through-hardened steel that delivers maximum breakage resistance in the toughest high-impact applications. Designed for the most demanding jobs, all MaxTemp products are guaranteed* against impact breakage in normal operating conditions. MaxTemp products are available in OEM standard, heavy-duty and extra heavy-duty options.

**ForgeTemp® steel**
Formulated for high abrasion with low to medium impact, ForgeTemp products are an economical option over MaxTemp versions when high impact resistance is not needed. This high carbon steel provides a good balance of wear and toughness – available in OEM standard, heavy-duty and extra heavy-duty options. Available with surface hardening for extreme abrasion.

**Special Application MaxTemp® steel (SAM)**
Special Application MaxTemp is a heat-treated alloy developed specifically for heavy-duty loader and excavator applications. Impact and wear resistant, and easily welded, Special Application MaxTemp steel is uniquely suited to handle the demands of severe applications for weld-in plate lips (base edges) in straight and modified vee (spade) configurations.

*Disclaimer: Guarantee against breakage is based on normal operating conditions and is at the sole discretion of ESCO Group LLC to determine if warranty is applied.

# “ESCO Carbide Plus blades are well worth the investment”

– Jeff Wright, Fleet Manager, Jackson County Road Depertment, Florida

# ESCO® Bucyrus Blades™ performance options

We offer a variety of options with carbide embedded and/or tungsten carbide inserted blades and cutting edges to significantly extend wear life in highly abrasive conditions with low to medium impact.

### Infinity® carbide embedded products

Carbide embedded products offer a significant increase in wear life over conventional steel products. Applied in high wear areas with approximately 40% of the carbide particles embedded into the parent metal ensures maximum abrasion resistance.

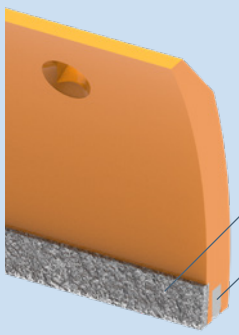
Our wear experts configure each carbide pattern to enhance performance and wear life. Infinity carbide overlay can be embedded in wheel loader, dozer, motor grader, scraper and snow plow blades, cutting edges and accessories.

**Economic Guarantee** – All ESCO carbide embedded Bucyrus Blades products are guaranteed to provide cost-effective service, defined as extending blade or cutting edge wear life a minimum of the additional cost of the tungsten carbide blade. If any carbide embedded product fails to prove cost effective in a recommended application, ESCO will replace the product free of charge. The customer must verify all wear life claims to ESCO's satisfaction by providing the machine hours obtained with the OEM product versus what was obtained with the ESCO carbide embedded product.

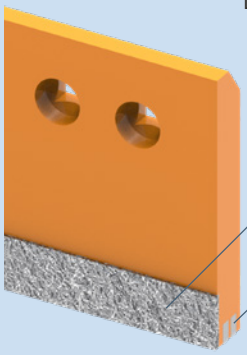
### Carbide inserted products

Virgin tungsten carbide inserts are available in select Bucyrus Blades cutting edges to further enhance performance and wear life. Combined with Infinity embedded carbide, wear performance is exceptional – even in the most abrasive conditions.

Carbide Plus™ Grader Blade




Deuce™ Grader Blade



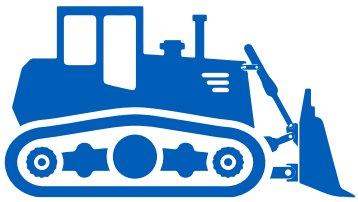
# ESCO® Bucyrus Blades™ application options

For enhanced machine performance with higher productivity and less maintenance, look for the best overall selection of cutting edges and accessories. ESCO's Bucyrus Blades product offering provides one of the widest range of application options in the markets we serve.

**ESCO Bucyrus Blades Application Options**

| OPTION | FEATURES | APPLICATIONS | MACHINE OPTIONS | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Loader | Dozer | Grader | Scraper | Excavator | Plow |
| MaxTemp® | Through-hardened for maximum toughness | High-impact, rocky conditions | ■ | ■ | ■ | ■ | ■ | ■ |
| ForgeTemp® | High carbon steel - economical alternative | High abrasion, low impact - applications in sand, dirt, small rocks | ■ | ■ | ■ | ■ | ■ | ■ |
| Special Application MaxTemp® (SAM) | Impact and wear resitance, easy to weld | Heavy-duty loader and excavator plate lip (base edge) | ■ | | | ■ | ■ | |
| Carbide Embedded | Up to 5 times the wear over standard blades Guaranteed cost-effective performance | Extreme abrasion with low impact | ■ | ■ | ■ | ■ | ■ | ■ |
| Carbide Plus™ | Tungsten carbide insert, carbide embedded face | High abrasion and low impact - applications in sand, mud, small rocks | | | ■ | | | ■ |
| Deuce™ Blades | Twin tungsten carbide inserts, carbide embedded face | High abrasion and impact - heavy construction and mining | | | ■ | | | |
| Surface-Hardened | Maintains sharp edges, lowest cost per mile over high carbon or hardened blades | Compacted snow and ice | | | ■ | | | ■ |
| Carbide Inserted Blades | Longer wear life over coventional snow plow blades and maintains a sharp cutting edge | Snow and ice removal | | | ■ | | | ■ |
| Poly Blades | Premium grade polyethylene for minimal friction and reduced chance of sparks | Runway snow removal, recycling and fiber processing yards, corrosive or chemical cleanup | ■ | ■ | | | ■ | ■ |

Wheel Loader



Dozer

Motor Grader

Scraper

Excavator

Snowplow

# ESCO® Bucyrus Blades™ product support

### Bucyrus Blades custom cutting edges and end bits

ESCO offers a complete line of Bucyrus Blades cutting edges and end bits for all makes and models of dozers, motor graders and wheel loaders. Edge and end bit combinations can be custom-engineered to provide the best performance in the required application.

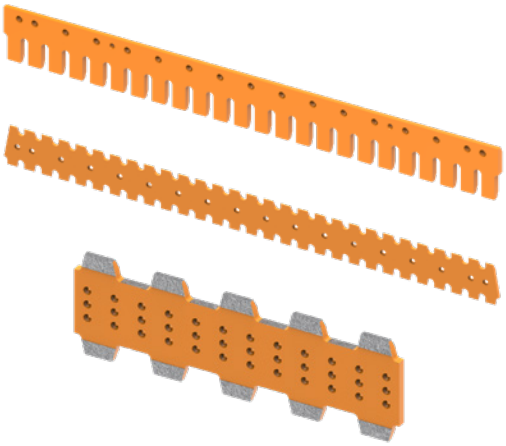
## Blade and end bit options

- Thickness selection
- Alloy preference
- Profile selection
- Infinity® embedded carbide

### Bucyrus Blades serrated cutting edges

Ideal for hard packed or winter surfaces, Bucyrus Blades serrated cutting edges can handle high impact and abrasive applications. Our serrated blades are a top customer choice for superior penetration and production. Serrated blades are available for motor graders, dozers, scrapers, excavators and wheel loaders.

Most Bucyrus Blades cutting edges can be modified to a serrated profile and custom engineered to match performance requirements. For extreme abrasion, Infinity® embedded tungsten carbide can be applied in a wide range of patterns to increase blade service life, improve performance and reduce downtime.

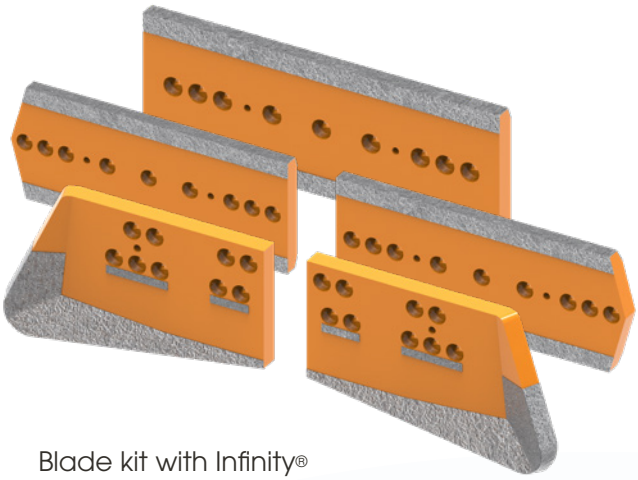


# ESCO® Bucyrus Blades™ product support

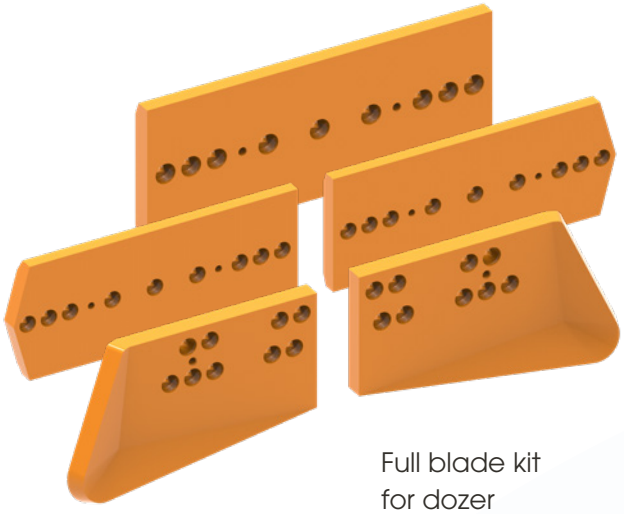
### Bucyrus Blades custom blade kits

Ordering blades for any machine is easier with Bucyrus Blades kits. We offer blade kits with a complete set of edges and fasteners, or with just the parts you specify – then order using just one part number. Custom kits are available for motor graders, dozers, scrapers and excavators.

Kits can be created for standard OEM style parts or with customized or upgraded products – including Infinity® tungsten carbide embedded blades, and Deuce™ blades or Carbide Plus™ blades.



Blade kit with Infinity® embedded carbide



Full blade kit for dozer

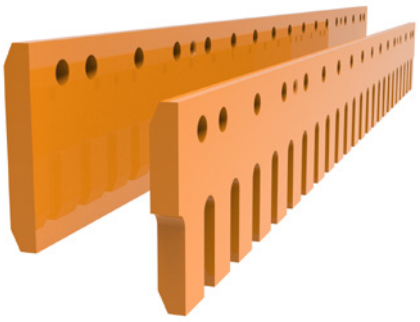
### Bucyrus Blades premium grade fasteners

High quality fasteners are essential for performance of blade and cutting edge systems. Bucyrus Blades premium fasteners are available in plow style bolts for tougher applications and carriage style bolts for snow plow or lighter applications.

Our plow bolts and nuts are SAE Grade 8 alloy; and carriage bolts and nuts are SAE Grade 5 alloy – both are heat-treated to the highest SAE standards for their grade. Superior grade fasteners ensure the strongest possible clamp load and shear protection with less chance of bolt elongation during service.

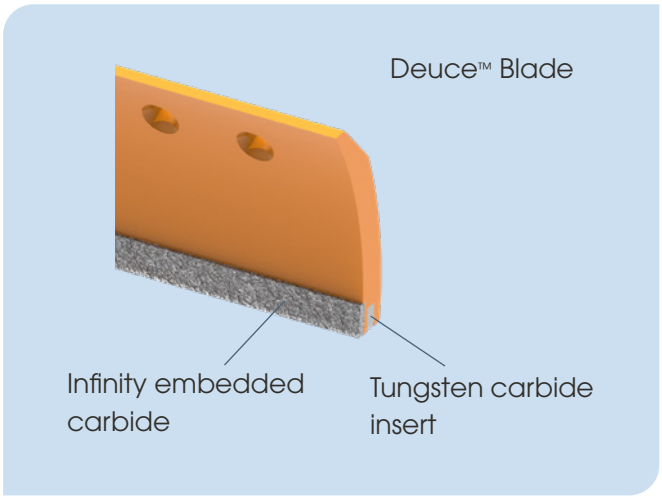
# ESCO® Bucyrus Blades™ products for motor graders

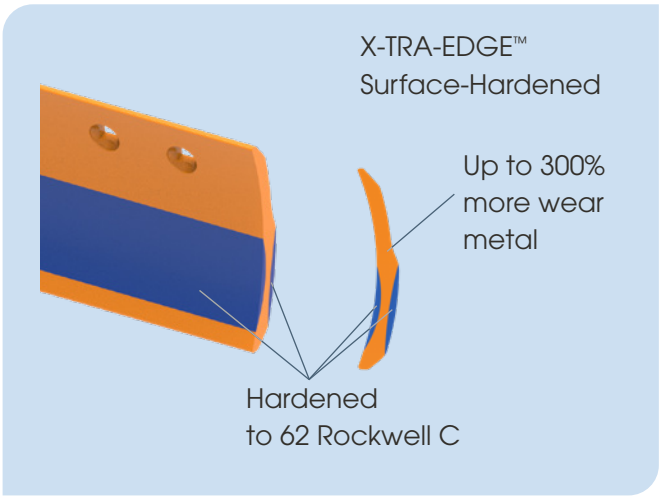
Proper selection of cutting edges is essential to motor grader performance – whether it is county roads, new highway construction or mining haul roads – properly matched components deliver maximum productivity with a minimum of downtime.



### Cutting edge options for optimum performance

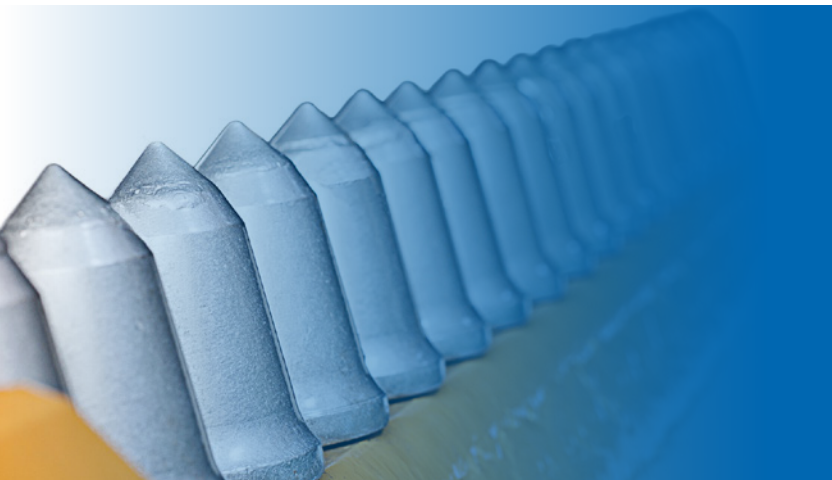
- Complete line of curved double bevel (CDB) edges for all makes and models
- CDB sizes from 1/2" x 6" for light grading up to 1" x 8" for greater wear life
- X-TRA-EDGE™ surface-hardened option up to 62 RC for maximum abrasion resistance
- Flat double bevel (FDB) are available in sizes 3/4" x 8" through 3" x 16"
- Serrated grader blades for frozen or hard packed ground conditions
- X-TRA-EDGE™ blades with more usable wear metal - optional surface hardening
- Carbide Plus™ and Deuce™ blades for extreme abrasion




### End bits

Bucyrus Blades grader end bits help protect the moldboard while extending the life of the cutting edges. Our end bits are offered in standard and heavy-duty, or optional Infinity® embedded carbide for added wear resistance.



**Infinity® 2000 carbide bit grading system**

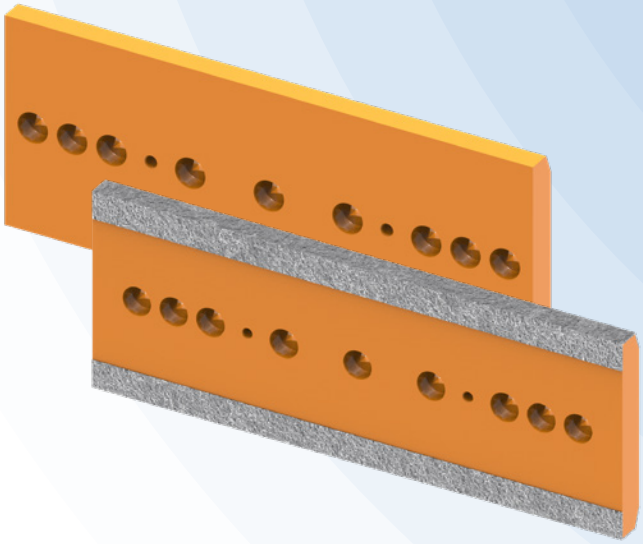
The Bucyrus Blades Infinity 2000 grading system is an innovative road maintenance product that replaces conventional grader blade offerings.

The system features rotating, replaceable tungsten carbide bits mounted in an adapter board to provide excellent performance for repair of unpaved road surfaces to their original contour.

# ESCO® Bucyrus Blades™ products for dozers

Dozers, from construction to mining class machines, can operate in a wide range of applications – from general purpose to some of the most severe conditions in the industry. For this reason, it is extremely important to have cutting edges and end bits that best match the work to be done.

Bucyrus Blades cutting edges and end bits are available in multiple alloys in a variety of duty classes. All dozer products can be custom configured and are available with Infinity® embedded carbide to combat severe abrasion.

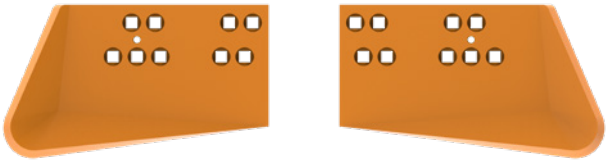


### Options for non-OEM applications

- Heavy-duty and extra heavy-duty to match impact and wear requirements
- Custom configured to meet user preference and site conditions
- Carbide embedded for extreme abrasion with light to medium impact

### End bits

Bucyrus Blades are offered in hot-cupped drop-corner or straight style to match production needs. Hot cupped, drop-corners are thicker throughout, self-sharpening and maximize dozer load capacity. Straight style for level cuts and to provide a smooth finish to the job site floor. Both profiles are available in standard duty, heavy-duty and extra heavy-duty, or optional Infinity® embedded carbide for added wear resistance.



Hot-cupped, drop-corner for maximum penetration

Straight style for smooth, level cuts

# ESCO® Bucyrus Blades™ products for wheel loaders

Whether replacing a loader bucket lip or enhancing the performance of an existing one, Bucyrus Blades product options will deliver the performance you need. Our loader offering is field-proven to provide reliable service with less maintenance for all wheel loader makes and models.

### Cutting edges and accessories

Rolled steel cutting edges and segments for wheel loaders are available in both half-arrow profile or flat double-bevel sections. The unique design and digging characteristics of half-arrow sections protects the base edge, improves penetration and increases resistance to impact breakage.

Half-arrow edge section

Flat double-bevel edge section

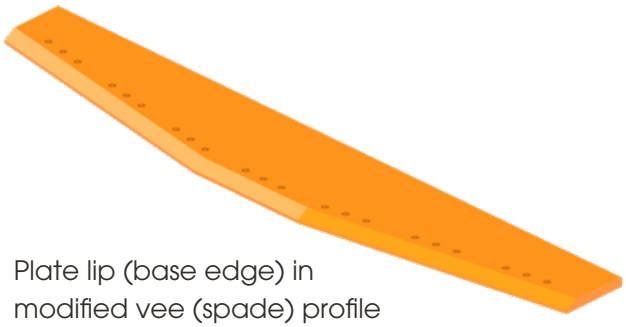


Plate lip (base edge) in modified vee (spade) profile

### Plate lip (base edge) options

Produced in premium Special Application MaxTemp® alloy (SAM), weld-in plate lips (base edges) for loaders are offered in straight and modified vee (spade) configurations. Modified vee profiles improve penetration and better distribute digging forces to reduce stresses on the lifting arms.

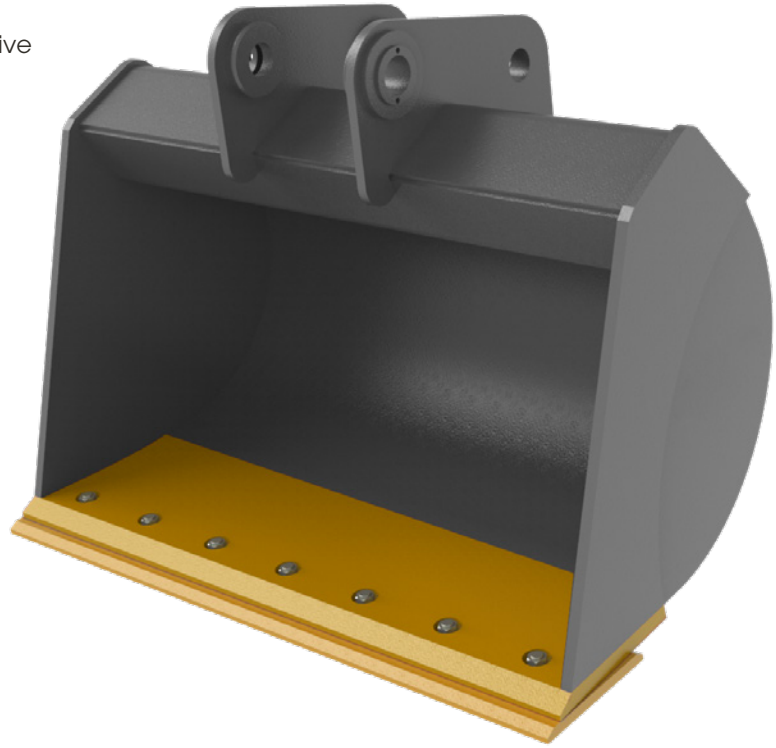
### Configuration options

- Standard plate lip without bolt-on edges or bolt holes
- Plate lip with bolt-on edges or drilled for bolt-on edges
- Plate lip with bolt-on edge segments and spaced for weld-on adapters or bolt-on adapters (pre-drilled)

**“In any digging conditions, Bucyrus Blades can provide the best edge combination to maximize performance.”**

# ESCO® Bucyrus Blades™ products for excavators

Hydraulic excavators are one of the most versatile machines used in construction, aggregate and mining operations. To maximize the capabilities of these machines, it is important to select the right ground engaging tools for the application. The comprehensive offering of Bucyrus Blades plate lips (base edges), cutting edges and accessories will ensure machine performance.



### Plate lip (base edge) options

With the ever-increasing power of excavators, and the demands of today's operations, Bucyrus Blades MaxTemp® or Special Application MaxTemp (SAM) through-hardened, heat-treated steel alloys are the top choice for performance and durability. Lips may be ordered bare or with a bolt-on cutting edge. MaxTemp and SAM alloy lips and edges are available in a wide selection of thicknesses and widths to meet all digging requirements.

### MaxTemp® and SAM alloy product benefits

- Proven toughness against severe impact
- Bevel edge is roll-forged or machine beveled
- Steel alloys are wear resistant while maintaining good welding characteristics
- Weld-in replaceable base edges, with or without bolt-on edges are available for all classes of excavators

# ESCO® Bucyrus Blades™ products for scrapers

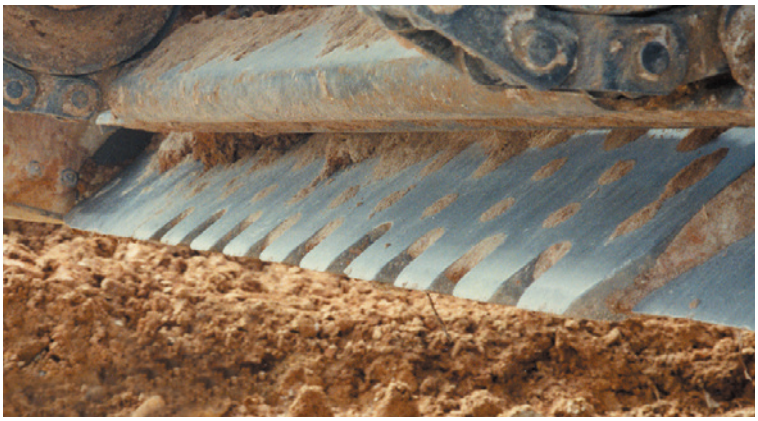
Scrapers are a very specialized machine for heavy construction operations and rely on unique ground engaging tools for optimal performance. The wide selection of Bucyrus Blades cutting edges and accessories ensures productivity with more uptime and less maintenance for all makes and models or scrapers. Select the job-engineered combination for the most efficient performance.

### Cutting edge options

Offered in standard, heavy-duty and extra heavy-duty versions with optional Infinity® carbide embedded for extended service life. Bucyrus Blades edges reduce operating costs, significantly outwear standard OEM versions and have precision fitment for easier field replacement.

### Serrated cutting edges

Available for both conventional and elevating scrapers, serrated edges are the top choice for tough, hard to penetrate conditions. Our serrated edges reduce cycle times, deliver better penetration than non-serrated drop center arrangements and lower the cost-per-yard of material moved.



### Routing bits

Bucyrus Blades routers are offered in drop-forged or fabricated roll-forged options. Offset ribs offer protection for bottom edge of the scraper bowl. Quality controlled manufacturing ensures clean, flat surfaces for easy installation and stable mounting. Router bits are also available with embedded Infinity carbide for improved wear resistance.

# ESCO® Bucyrus Blades™ products for snow plows

Bucyrus Blades snow plow blade options are a cut above other manufacturers. Whether clearing snow and ice from major highways to airport runways or just a parking lot, we have the blade combination do the job right.

### ForgeTemp® snow plow blades

Our snow plow blades in the ForgeTemp alloy is one of our most popular choices to provide the lowest cost-per-mile of operation. ForgeTemp alloy is our highest carbon steel for excellent hardness but with a balanced toughness for impact resistance.

### Surface hardened snow plow blades

The surface flame-hardened option provides up to 62 RC for excellent wear resistance. Available with Infinity embedded carbide for maximum abrasion resistance.

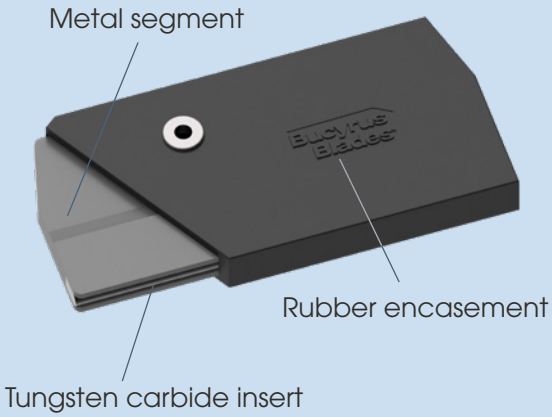
### Tungsten carbide inserted blades

Bucyrus Blades carbide inserted snow plow blades allow higher speed operation, even in abrasive conditions. This carbide configured blade is the best choice for major highways and airport runways – resisting abrasion up to 30 times longer than conventional steel blades.

### FlexPro™ snow plow blades

The FlexPro system features tungsten carbide inserted blades encased in specially formulated rubber that absorbs impact and decreases damaging vibration to reduce wear and tear on the equipment. FlexPro blades were engineered to match variations in the road surface and minimize damage to highway markings.

FlexPro™ Snow Plow Blades

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