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**FROM SCARFING TO GRINDING, ABRASIVE INNOVATION IS EVOLVING SUSTAINABLY**

**Amit Koul**  
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# evolving sustainably

By **Staff Report** February 7, 2025 12:24 pm IST



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***Abrasives have evolved, and so has their industry focus. They are now used in sophisticated machinery and engineering. Amit Koul, Vice President – Norton Abrasives, India, shares the innovations in materials and technology, such as diamond and CBN abrasives, transforming the automotive, steel, and foundry sectors while reducing waste and improving product quality.***

**How have abrasives evolved in modern manufacturing processes, and what are some key applications where their role has been transformative?**

In the past, abrasives were primarily used for stock removal in foundries, forging, and similar applications. However, due to advancements in precision engineering and the introduction of sophisticated machinery, abrasives have now evolved into more dynamic and cutting-edge solutions for various industries. This, combined with customers' expectations for quality and tolerances and a renewed focus on sustainability, redefines the role of abrasives across different applications.

In automobile component manufacturing, there is an increased need for surface finish with changing job material compositions and burn-free grinding requirements, which in turn are making the grinding process complex. Advanced materials such as engineered ceramic abrasives with fine-grit grains and porous products are increasingly significant for specialised surface finishing requirements. This has led to a notable shift in the usage of engineered abrasives, such as cubic boron nitride (CBN) and diamond abrasive products, over the conventional Aluminum Oxide abrasive products for many grinding applications, such as crankshafts, camshafts, bearings, snagging, gear, etc. The automobile and bearings industries are continually looking to

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The steel industry has taken on the serious challenge of carbon neutrality and is moving steel billet and slab scarfing operations to grinding operations. At the same time, foundry industries are adopting robotic grinding technologies. Recent trends in electronics, ceramics, and glass have led to the use of fine-grit grinding wheels to achieve nano-level precision and surface textures.

This transformation has enabled manufacturers to achieve tighter tolerances, improved surface finishes, and greater efficiency, ultimately enhancing overall product performance and reliability.

**Could you elaborate on Norton's latest innovations in abrasive technology and how these advancements are helping manufacturers improve efficiency and precision?**

We at Norton have made remarkable advances in abrasive technology by introducing innovative products designed for manufacturing efficiency and precision. We are committed to continuously innovating diverse solutions for core and emerging industries, offering various tailor-made solutions for different industry sectors.

Norton Abrasives was the first to offer solutions for super grinder operation in steel conditioning—from scarfing to grinding—thereby contributing to our customers' carbon neutrality programs. We have also developed innovative solutions for foundry applications. The high-performance foundry wheel (Orient OXP Snagging Wheel), specially designed for the foundry segment, offers 7X to 8X life with excellent cut rates for faster production with reduced operator fatigue. With up to 40 kg less wheel dust generation, the wheel delivers cost savings and enhances workplace safety.

Norton has introduced new abrasive grains and bonds, including Norton Quantum Prime, Ideal Prime, Norton Blu, Razor Star, and V-Power, helping our customers enhance their productivity, quality, and cost efficiency.

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With over 8 decades in India and pioneering Abrasives manufacturing in India, Norton Abrasives offers a host of advantages to our customers. We have global technology made available locally, developing India-specific solutions in our state-of-the-art R&D centre in Chennai with smooth lead times, end-to-end abrasive product solutions, and an extensive channel network strength.

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### **In what ways do abrasives contribute to achieving precision machining and assembly for key industrial sectors?**

Abrasive grinding wheels made from engineered high-performance materials such as diamond and cubic boron nitride

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help achieve finishes and fit with an accuracy of microns, ensuring noise-free and vibration-free operations.

Norton's products for precision machining are manufactured using engineered ceramic grains and bond systems designed to promote free cutting, minimal thermal damage to components, achieve tighter tolerances, reduce power consumption, and minimal material waste. This, in turn, leads to shorter cycle times, enhancing productivity and overall operational efficiency.

### **How is Norton Abrasives addressing the environmental impact of abrasives, and what benefits can manufacturers expect by adopting your solutions?**

We are committed to addressing the environmental impact of abrasive products through a multifaceted approach that prioritises sustainability and operational efficiency for our customers. The focus is on solutions that reduce the energy required to remove a unit volume of material. This reduces operational costs and carbon footprint, aligning with our sustainability efforts.

We are focusing on developing products using high-performance raw materials that improve product life while reducing the recycling cost.

Initiatives are led to go beyond offering abrasive products and creating value for customers by offering digital solutions such as Grindsmart and PGS (Performance Grinding Solutions) that can help customers visualise the grinding process and monitor performance in real time. Analytics and insights are provided to cue when parameters drift from optimal conditions, helping customers conserve wheel life and attain efficiency. These solutions are one-of-a-kind, providing customers with a comprehensive approach to efficient and sustainable manufacturing.

**How do abrasives enhance overall product quality while reducing**

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Engineered abrasives exhibit properties related to their toughness, hardness, and thermal behaviour. These properties promote controlled behaviour and complement process needs like improved dress frequency, less thermal damage, and better cut rates. This ensures less product wastage while providing better quality.

In addition, there is an expressed need to minimise consumption while maximising output, with less cutting, grinding, and operations costs and getting more production yield. To enable this, we need products that wear less and retain sharpness for longer, meeting all required quality parameters.

Norton is at the industry forefront and has many innovative offerings for various precision-heavy industries that enhance their operational efficiency, achieve higher product quality, and promote sustainable practices.

Tags: abrasive Automotive manufacturing Saint Gobain sustainability



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A large banner for the SHEFACTOR event. It features a close-up of a woman's face on the left, with a background of binary code (0s and 1s) and industrial scenes on the right. The text "OEM UPDATE" is at the top left. Below it, "Association Partner" is written above the WIMA logo. The main title "SHEFACTOR" is in large blue letters, with "LESSONS FROM MANUFACTURING LEADERS" underneath. At the bottom left, it says "12th February 2025". At the bottom right, there is a "REGISTER NOW!" button.

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