

### Overview

Non-woven abrasives are used for preparing and applying a final surface finish, which can be critical to the performance and appearance of the workpiece. These products are manufactured using a web of nylon fibers that are bonded (not woven) together with synthetic resins. The fibers are impregnated with abrasive grains, producing a cushioned, three-dimensional material that is pliable, conformable to the workpiece and long-lasting. Non-woven abrasives can be the ideal grinding products for deburring, cleaning and imparting the desired finish to a wide variety of materials.

The relatively non-aggressive nature of nylon and the abrasive grit used in non-woven abrasives make them excellent finishing tools. With their open-mesh construction, non-woven abrasives are waterproof, washable and resilient. They resist loading and rusting, and are not conductive. While 60 grit to 80 grit abrasives are considered intermediate sizes in other products, they are considered coarse for non-woven products. Non-woven abrasives can be used on a range of metals including aluminum, brass, copper, nickel, chrome plate and stainless steel. Used wet or dry, non-woven abrasives enable the user to achieve a consistent, uniform finish. They conform to irregular surfaces with minimal smearing and discoloration of the workpiece.

Conventional coated abrasives and non-woven abrasives use the same basic grain types. Silicon carbide is sharper, cuts faster and produces finer scratch patterns on most surfaces. Aluminum oxide is more durable and tends to last longer. Aluminum oxide is more aggressive in applications such as hardened steel parts and produces less discoloration on aluminum.

### Grit Sizes

These range from coarse grit, used for general cleaning, to micro fine (1,000 grit) for light scuffing and blending. The lower the grit number, the larger the grains. Large particles (coarse grit) result in a more aggressive cut and a coarser finish. Small size particles produce a fine surface finish, if all other conditions are equal. When selecting a conventional bonded or coated abrasive product, choose a specific grit size, for example 120 grit. When selecting a non-woven abrasive, one of the following designations is used:

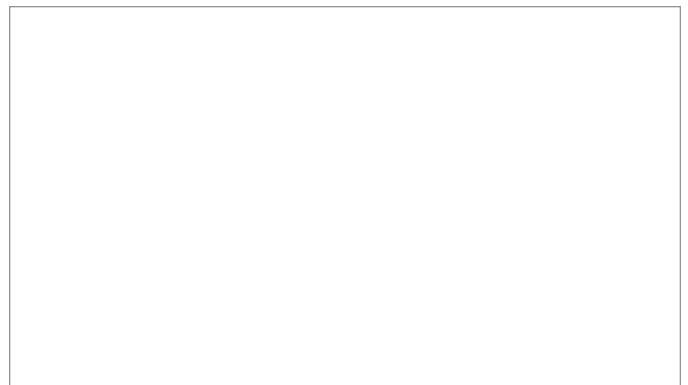
Coarse (C) – 50 to 80 grit	Very Fine (VF) – 240 to 360 grit
Medium (M) – 100 to 150 grit	Ultra Fine (UF) – 600 grit
Fine (F) – 180 to 220 grit	Micro Fine (SF) – 1,000 to 1,200 grit

### Density

This refers to the amounts of bonding agent and abrasive grain that have been compressed into the non-woven product. Harder density products cut faster, last longer and produce finer finishes than softer density products. Softer densities offer more conformability to the work surface and less tendency to load or burn the workpiece.

### Hand Pads

Hand pads are designed to provide excellent conformability and flexibility when hand finishing the work surface. They are generally 6" x 9" but are easily folded into smaller sizes as needed. In wet applications, many users choose non-woven hand pads as a replacement for steel wool because they are non-metallic and don't rust.



### **Extra Coarse Grit Products**

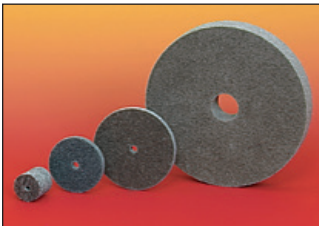
These may be used for removal of surface rust and residue, corrosion, light weld splatter and other surface contaminants, sharp edge radiusing or deburring, or a decorative finish.

### **Flap Wheels**



Flap wheels are fabricated by mounting sheets of non-woven material around a center hub so that the tightly-packed pieces form the spokes of a wheel. This is the best choice where conformability to a surface or a long-line brushed finish is required.

### **Unified Wheels**



Unified wheels are formed by compressing multiple layers of non-woven web material and bonding them together to form a wheel. They are ideal for general-purpose cleaning and deburring.

### **Wheel Speed**

This refers to the speed at which the wheel is run, which affects product finish, rate of cut and wheel life. In general, fast wheel speed gives harder action and a finer finish; slower speeds give softer action and a coarser finish. The following are recommended operating speeds for the most common applications.

Cleaning and upgrading surface conditions . . .	2,200 to 6,000 SFPM
Cut buffing on metal surfaces . . . . .	6,500 to 8,000 SFPM
Deburring . . . . .	5,500 to 8,000 SFPM
Decorative finishing . . . . .	500 to 3,000 SFPM
Imparting decorative finishes . . . . .	900 to 3,000 SFPM
Oxide removal . . . . .	3,500 to 6,500 SFPM

### **Pressure**

Light to medium pressure is recommended for most operations. Flap wheels require much lighter pressure to perform properly than other non-woven wheels; unified wheels can withstand much higher pressures in order to perform deburring jobs. Always avoid excessive pressure which may result in wheel deformation and damage to the work surface.

### **Feed Speed**

Slow feed speed allows longer dwell time and permits more work to be done on each piece. Oscillation may be used to break up scratch lines and produce a more uniform finish.

### **Lubricants**

The use of lubricants such as water, water-soluble oil and straight oil will decrease the heat generated while running and improve the luster.