



RECYCLING INDUSTRY
Products To Convey, Sort, and Process
APACHE | TRICO INDUSTRIAL DIVISION



WE KEEP RECYCLING FACILITIES *MOVING*

CURBSIDE RECYCLING HAS HELPED TO INCREASE RECYCLING ALMOST 30 PERCENT AMONG HOMEOWNERS.

At Apache we have the right products to keep facilities up and running and improve material recovery rates!

In the single stream recycling process, mixed products, such as paper fibers, plastics, metals, and other containers are collected curbside in a single container. Instead of being presorted by homeowners, these mixed materials are transported to a materials recovery facility (MRF) where products are separated by type.

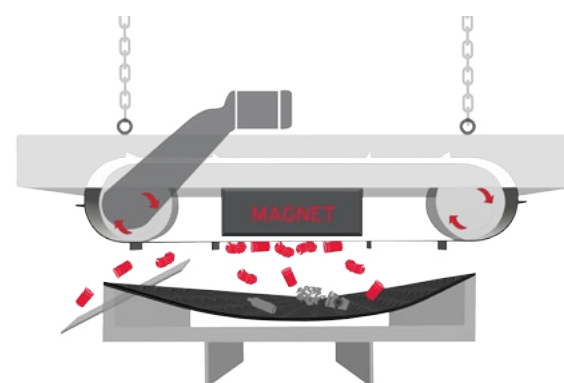
MRF are highly engineered with complex systems that are more efficient, and more cost effective, than systems that require consumers to separate items on their own. With more than 100 different conveyors in some facilities, these systems demand high performance and dependability.

- From eddy current belts to washdown hoses, we have the products you need.



MAGNETIC SEPARATOR

EDDY CURRENT



Magnetic separator belts are on short conveyors that wrap around the outside of a magnet. They are generally mounted across the width of the conveyor belt, near the head/discharge pulley.

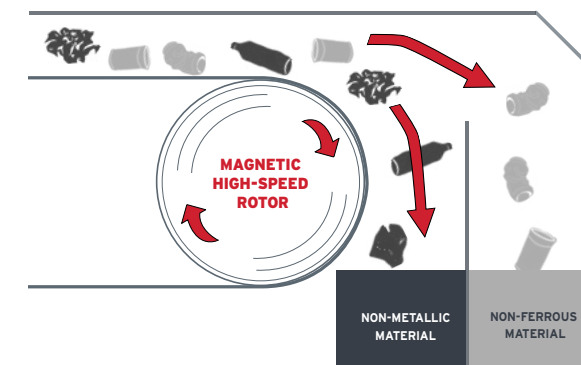
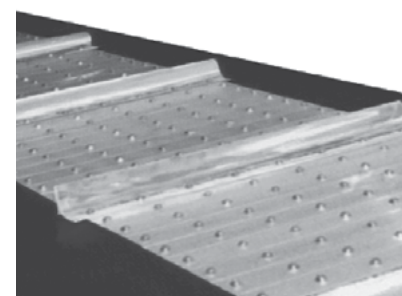
The magnet attracts ferrous material, which is moved by a separator belt to a collection bin or chute.

► RUBBER CLEATED

Rubber belts can be used for light to moderate industrial service. Normally a 2-ply rubber with 1/2 -3" high cleats, these belts are vulcanized endless or connected with high-grade, stainless steel mechanical fasteners.

► METAL CLAD BELTS

Apache's Duroclad™ belts are specialty fabricated for severe applications. Our technicians fabricate plates made of stainless steel, urethane, or high-grade composites to resist the effects of large, heavy, and sharp metals. Stainless steel cleats are mounted to the top cover (typically a rubber belt).



Eddy current belts are used to separate nonferrous materials from other waste by using powerful magnets to repel nonferrous material.

Repelling the material causes the nonferrous metals to be thrown from the waste being separated. The waste and nonferrous materials are projected onto two separate takeaway conveyors.

Separators are often the last step in a larger conveyor configuration. The majority of ferrous material is removed before entering the eddy current separator.

► RECYCLING APPLICATIONS

Eddy current separator belts can be found in numerous recycling applications such as auto shredding, electronics recycling, plastic recycling, glass recycling, foundries, wood recycling, and medical waste recycling.

► SYSTEMS

These systems allow separation facilities to increase productivity by eliminating human error sometimes seen in hand sorting operations.



SINGLE STREAM RECYCLING SYSTEM



- A TIPPING FLOOR**
Unsorted recyclable materials are initiated dumped and stored for processing at an MRF facility.

B DRUM FEEDER
Materials picked up from the tipping floor flow through a heavy-duty spinning drum, which distributes them evenly onto a conveyor belt.

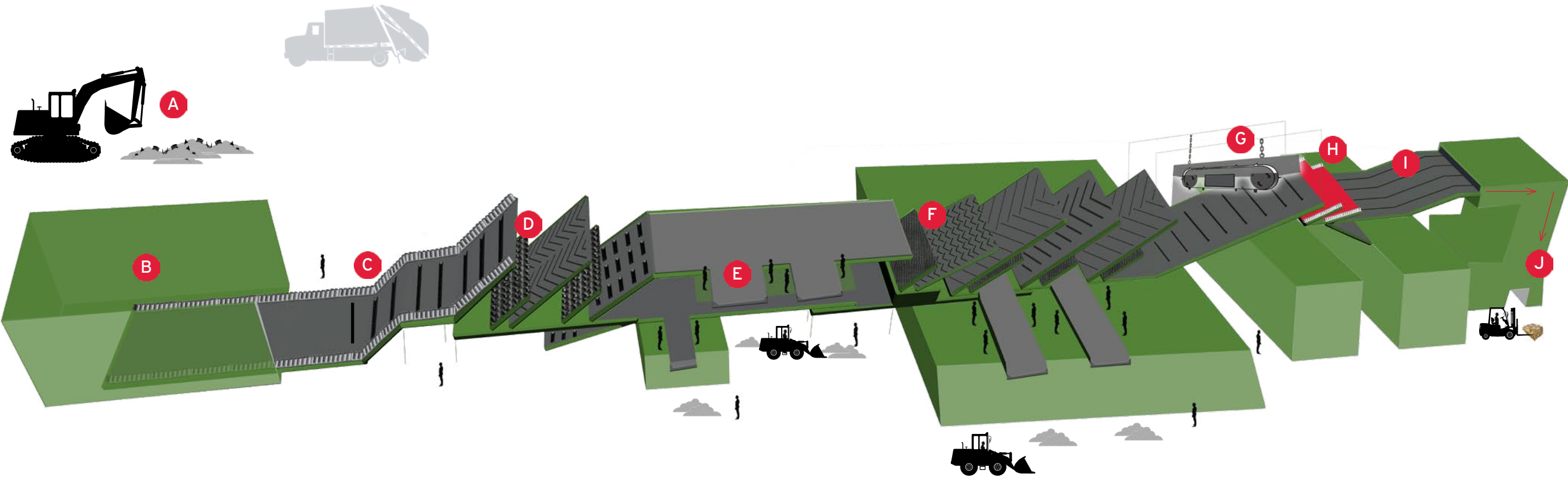
C INITIAL SORTER / MANUAL PRESORTING
Facility workers manually remove materials like plastic bags or oversized materials that could jam sorting equipment or won't fit through the sorter.
- D LARGE STAR SCREENS**
Cardboard materials are separated out through a series of offset sorting discs, which are typically star-shaped. Smaller materials fall through the screens onto conveyor belts below and continue through the sorting process.

E SECOND SORTERS / MANUAL SORTING
Additional facility workers sort through the remaining materials and remove additional, smaller materials that are not recyclable or may damage sorting equipment.
- F MEDIUM STAR SCREENS**
A series of additional, smaller sized, sorting stars/discs lift out paper materials. Other products such as aluminum and plastic fall through the sorting screens onto the main sorting belt. Heavier materials, like glass, filter through and land in sorting bins or are filtered out to additional manual sorting lines.

G MAGNETIC SEPARATOR
Metal and plastic materials pass underneath a magnet that attracts and removes any magnetic items for separate processing.

H EDDY CURRENT SEPARATOR
A power magnet is used to repel nonferrous material from other waste. Nonferrous metals are thrown forward into a product bin, while non-metals simply fall off the belt due to gravity.
- I OPTICAL SORTER**
Remaining plastic materials travel on non-reflective, high-speed conveyors, are sorted by infrared lasers and filtered by blasts of air. The various types of plastic are grouped and sorted into separate bins for processing.

J BALER / LANDFILL
Sorted material types, such as paper, plastic, cardboard, and metal, are transported by separate conveyor lines where they are processed into bales. Unsorted or remaining materials that have not been sorted into recyclable product groupings are sent to a disposal facility, such as a landfill.



APACHE'S
BELTING
SOLUTIONS
FOR RECYCLING
APPLICATIONS:

T-Cleat (Cross Cleat)

Durowall™

Chevron Belt

Durocleat™

Herringbone Belt

Magnetic Separator

Eddy Current

Choosing the correct belt spec may be determined by many factors, such as the material being handled, the equipment or by the climate where a facility is located.

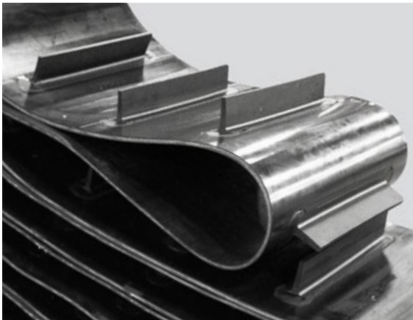
Fabric bottom covers have a special orange treatment that provides additional durability and a low coefficient of friction, resulting in less motor power consumption.

CUSTOM BELT FABRICATION

T-CLEATS (CROSS CLEATS)

We have wide range of cleat sizes are available to elevate bulk and sorted material.

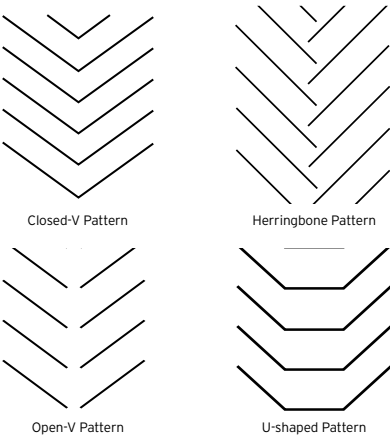
Many wide belts have precisely sized gaps, placed to accommodate the return wheels and discs, located on the return side of the conveyor structure.



CUSTOM CHEVRON & HERRINGBONE CLEATS

Apache is the market leader in producing custom chevron and herringbone cleats, ranging from 3/8-2" in height. These cleats are designed to return on standard flat idlers.

With more than 150 different patterns currently available, we can recommend a pattern that works for you, or provide a design that fits your specific conveying needs.



DUROWALL™ CORRUGATED SIDEWALL BELTS

Our Durowall™ product line supplies a variety of custom made sidewall belting to handle a wide range of recyclable materials, such as paper, wood, plastic, bottles, cans, glass, and metals.

Sidewall heights range from 1 -4" high for thermoplastic belting, and from 1-10" high for rubber sidewalls. Our sidewall products are used to contain spillage on horizontal applications, as well as for elevating the product quickly in steep-angle applications.

OPTICAL SORTING BELTS

We fabricate belts for the optical sorting process using V-guides to create “lanes” on the belt. These conveyors travel at high speeds, so the sort lanes help settle the materials for easier processing.



RECYCLING CONVEYOR BELT SPECS

DUROCLEAT™ TOP COVER

Moderate Oil Resistance (MOR) compounds make this belt resistant to moderately oil contaminants, making it an excellent choice for moving debris in the waste and recycling industries.

The chevron cleated top cover is a 1/4" high x 3/8" wide x 6" overall width, and runs the full width of the belt. These high-grip cleated profiles are excellent for moving material on incline applications. Available in widths up to 84" with rubber bottom covers or bare fabric bottoms for operation on slide/teel bed surfaces.



SPEC#	DESCRIPTION
58	2-ply 220# 1/8 X 1/16
56B	2-ply 220# 1/8 x Bare Back
178	3-ply 330# 1/8 x 1/16
247	3-ply 330# 1/8 x Bare Back

BLACK RUBBER TOP COVER

Belts with durable, smooth rubber top covers are popular for conveying a wide variety of materials. Fabric bottom covers are designed to travel on slider bed/metal pan conveyors. These belts have moderately oil-resistant covers to withstand light oils, greases, and chemicals.

Two of our most popular belt specifications offer a heavier 3/16" top covers in addition to durable rubber bottom covers. Both are excellent options for operating on troughing idlers.

SPEC#	DESCRIPTION
26C	2-ply 220# 1/8 x Bare Back Moderate Oil Resistance
80	3-ply 225# 1/8 x Bare Back Moderate Oil Resistance (up 110" wide)
26B	3-ply 330# 3/16 x Bare Back Moderate Oil Resistance
24B	2-ply 220# 3/16 x 1/16 Moderate Oil Resistance
26A	3-ply 330# 3/16 x 1/16 Moderate Oil Resistance

PVC TOP COVER

Interwoven, single-ply polyester belts are popular choices in recycling facilities, particularly for sorting lines. The carcasses offer excellent tear and cut resistance, operate on small pulleys, and provide resistance to light oils, greases, and chemicals. Brushed surface bottoms provide smooth travel on metal bed conveyors.

SPEC#	DESCRIPTION
5045	Interwoven 120# Polyester Black PVC Cover x Brushed
5051	Interwoven 150# Polyester Black PVC Cover x Brushed
5061	Interwoven 200# Polyester Black PVC Cover x Brushed

URETHANE TOP COVER

Strong, flexible, and durable, our interwoven polyester carcass belts with red polyurethane covers withstand abrasion, cutting, and gouging. These belts are the preferred choice for eddy currents, as well as other high abrasion applications.

SPEC#	DESCRIPTION
90	Interwoven 90# Polyester Red Urethane Cover x Brushed
4151	Interwoven 120# Polyester Red Urethane Cover x Brushed



PTFE =
Polytetrafluoro-
ethylene

SBR = Styrene
Butadiene

UHMW =
Ultra High
Molecular
Weight

CONVEYOR MATERIAL CONTAINMENT

Less spillage. Less Cleanup. Apache's material containment solutions prevent spillage, which means less clean up. Our products help the separation process by splitting clumped refuse into smaller pieces for high-speed sorting. Rubber and synthetic polymer products are used throughout the recycling process and can be found on many types of recycling machinery. Other products are designed to contain refuse within the conveyor and processing system.

SKIRTBOARD RUBBER

Apache inventories a wide variety of rubber skirting available for immediate shipment. Skirting is an important conveyor component that minimizes spillage at loading and transfer points, in addition to helping center material on conveyor belts.

- ▶ Sold in 50' rolls
- ▶ Widths up to 48"

COMMON MATERIALS

- ▶ SBR skirtboard rubber and urethane products
- ▶ Oil, chemical, abrasion, heat, and ozone resistant compounds
- ▶ Urethane, UHMW, PTFE, and other high performance polymers

COMMON APPLICATIONS

- ▶ Deflectors
- ▶ Linings
- ▶ Flaps
- ▶ T-scale seal rubber strip



MECHANICAL FASTENERS

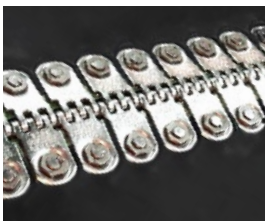
Mechanical fasteners (steel lacing) comes in a variety of styles, each designed to work with different belt thicknesses, and minimum pulley diameters. Each type of fastener requires specific tools for proper installation. Standard, stainless and other steel options are available.

POPULAR TYPES

- ▶ Alligator® Staple: #125, #187
- ▶ Flexco® Bolt Hinge: #375, #550
- ▶ Flexco® Rivet Solid Plate: R5, R5-1/2



Alligator® Staple



Flexco® Bolt Hinge



Flexco® Rivet Solid Plate

HOSE PRODUCTS

Washdown hose and nozzles, pressure washer hose and accessories, as well as general purpose air/water hose are available for general maintenance and cleanup in recycling facilities.

WASHDOWN & CLEANUP

- ▶ Mill washdown hose
- ▶ Spray nozzles
- ▶ General service air and water hose

PRESSURE WASHER PRODUCTS

- ▶ Hose assemblies
- ▶ Pressure washer guns, wands, nozzles, and spray tips

GENERAL PURPOSE AIR/WATER

- ▶ Durable EPDM rubber



RECYCLING TERMS

BALE: Densified, bound cube of recycled material such as waste paper, scrap metal, or rags.

C&D: Construction and demolition debris.

CASCADE: When material on a conveyor belt is going up incline, some types of material fall back down the belt.

COMMINGLE: Different recyclable materials mixed in the same container.

CULLET: Clean, color-sorted, crushed glass added to raw materials to increase the rate of heat gain, thus reducing melting time and fuel costs.

DISPOSABLE PRODUCT: Any product with an essential part which cannot be recycled, refilled or renewed.

FERROUS METALS: Magnetic metals derived from iron or steel.

HIGH-GRADE PAPER: Relatively valuable types of office papers, such as computer paper, laser printout, white ledger and tab cards. White ledger includes most copier paper, letterhead and non-glossy non-newsprint.

MATERIALS RECOVERY FACILITY (MRF): A plant which processes or prepares recoverable materials for shipment to end-users. Incoming material can be commingled or source separated as recyclable, reusable and compostable materials. At some MRFs, materials are extracted from mixed waste.

NON-FERROUS METALS: Nonmagnetic metals such as aluminum, lead, and copper.

NON-FIBER: Refers to plastics and metals or can be considered any material that does not contain fiber.

OCC: Old corrugated containers, also known as cardboard.

ONP: Old newspaper.

RECOVERY RATE: The percent of usable recycled materials (otherwise destined for disposal) that are collected, reprocessed, remanufactured, and reused. This is an important revenue stream for MRFs

RECOVERABLE MATERIALS: Materials which can be separated from waste for reuse, recycling, or composting. These may include production scrap, corrugated cardboard containers, office papers, pallets and many other materials.

RECOVERY RATE: The quantity of a waste fraction recovered as a percentage of the total waste.

RESOURCE RECOVERY: The extraction of discarded materials for use in the manufacture of new products or as a fuel or energy source. An "umbrella" term for recycling, composting, waste-to-energy, and other alternatives to landfills.

SHREDDING: Size reduction by shearing, tearing, or chopping action.

SORT LINE: Conveyors used for initial manual separation of materials and as inspection lines later in the process.

STAR SCREENS: Screen decks used to separate OCC & ONP from the recycling stream.

WASTE STREAM: Waste from the point of generation to a final destination.

WHITE LEDGER: White sulfite or sulfate ledger paper. Includes copier paper, letterhead and white notebook paper.

EPDM =
Ethylene
Propylene
Diene
Methylene



We have product worksheets available to simplify the process of product selection. Apache-Inc.com/worksheets



ADDITIONAL RECYCLING APPLICATIONS

Similar processes are used across most recycling segments. In addition to products for single stream recycling, we have the products you need for *every* recycling application!

- ▶ Construction & Demolition (asphalt, concrete, rebar)
- ▶ Plastic separation
- ▶ Wood products/composting
- ▶ Scrap Metal
- ▶ E-waste (computers, TVs, etc.)
- ▶ Municipal Solid Waste (MSW)



BELT / HOSE/ CUT & MOLDED PRODUCTS / ACCESSORIES

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CONSUMER PRODUCTS 800.459.8423

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