



Reliable, Steady  
Bulk Material Flow

# KEEP IT MOVING



## LINING SOLUTIONS

Promotes reliable,  
steady bulk material  
flow. Abrasion,  
chemical and  
corrosion-resistant.  
Low coefficient  
of friction.  
No moisture  
absorption.  
Reduces or  
eliminates  
arching,  
ratholing  
and  
erratic  
flow.

Belt scrapers  
Belt skirting  
Bunker liners  
Chain conveyor flights  
Chute liners

Cyclones  
Railcar liners  
Dead plate  
Diverter bars  
Off-Road truck beds

Dragline buckets  
Conveyor skirting  
Drag chain conveyor liners  
Dust collection hopper liners  
Front end loader bucket liners

Pugmill Paddles  
Under belt wear strip  
Reclaimer buckets  
Screw conveyor liners  
Self-unloading ships

Silo liners  
Slider beds  
Storage bin liners  
Surge bin liners  
Transfer chute liners

Wearstrip  
Hopper liners  
Vibrating bin dischargers  
Vibratory feeder liners  
Transfer plates

# PREMIUM LINING MATERIALS

## REDCO™ LINERS

### REDCO™ UHMW

Offers a combination of excellent machinability and low surface friction with outstanding wear and corrosion resistance. FDA & USDA approved, REDCO™ UHMW reduces material hang ups and enhances material flow, increasing your production and your profits.

### REDCO™ POLYURETHANE

Designed for use in impact, abrasive, low temperature, and gritty environments resulting in a material with elasticity and memory with a large range of hardnesses. Ideal in locations where material impact and directional changes are causing excessive wear or material deflection is required.

## SPECIALTY & HIGH PERFORMANCE LINERS

### REDCO™ TIVAR® 88

Proven to increase production by promoting material flow of congested materials due to its low surface friction. TIVAR® 88 liners are the perfect solution when you need to reduce or eliminate arching, ratholing, and erratic material flow challenges.

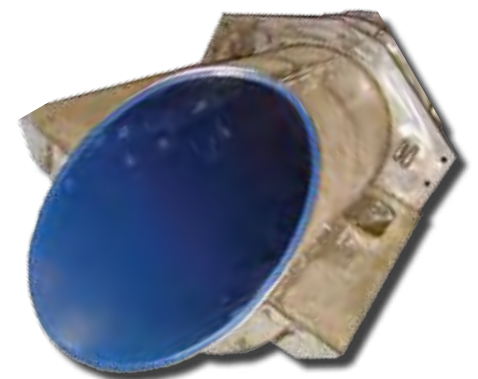
- Abrasion, chemical and corrosion resistant
- Low coefficient of friction
- No moisture absorption
- Reduces or eliminates arching, ratholing and erratic flow
- Weldable grade available (REDCO™ TIVAR® 88-2)

### REDCO™ TIVAR® CERAM P®

The ultimate material for high load, high speed and severe sliding abrasion applications. Composed of virgin polymer and premium additives, REDCO™ TIVAR® CERAM P® is a shatter-resistant alternative to ceramics, reducing wear and machine maintenance downtime.

OTHER SPECIALTY LINERS ARE HIGHLIGHTED  
FOR INDUSTRY SPECIFIC APPLICATIONS

[www.redwoodplastics.com](http://www.redwoodplastics.com)





# IMPACT & ABRASION PROTECTION

## SUGGESTED MATERIALS FOR GENERAL IMPACT ANGLES

There are three kinds of abrasion: sliding, impingement, and impact. Redco™ UHMW/PE products usually are designed to ‘work’ in sliding applications, Redco™ Polyurethane in the other two.

90° - Urethane liners are strong options.

70° - Urethane liners work best at this angle.

50° - Impact is severe at this angle, although Urethane is an option, call Redwood Plastics for assistance with the grade selection.

30° - Gouging becomes a serious problem at this angle, although Urethane is an option. Contact Redwood Plastics for assistance with the grade selection.

5° - Urethane liners are generally used in this situation, although Tivar® 88 liners can be used for soft particles and slow velocity.

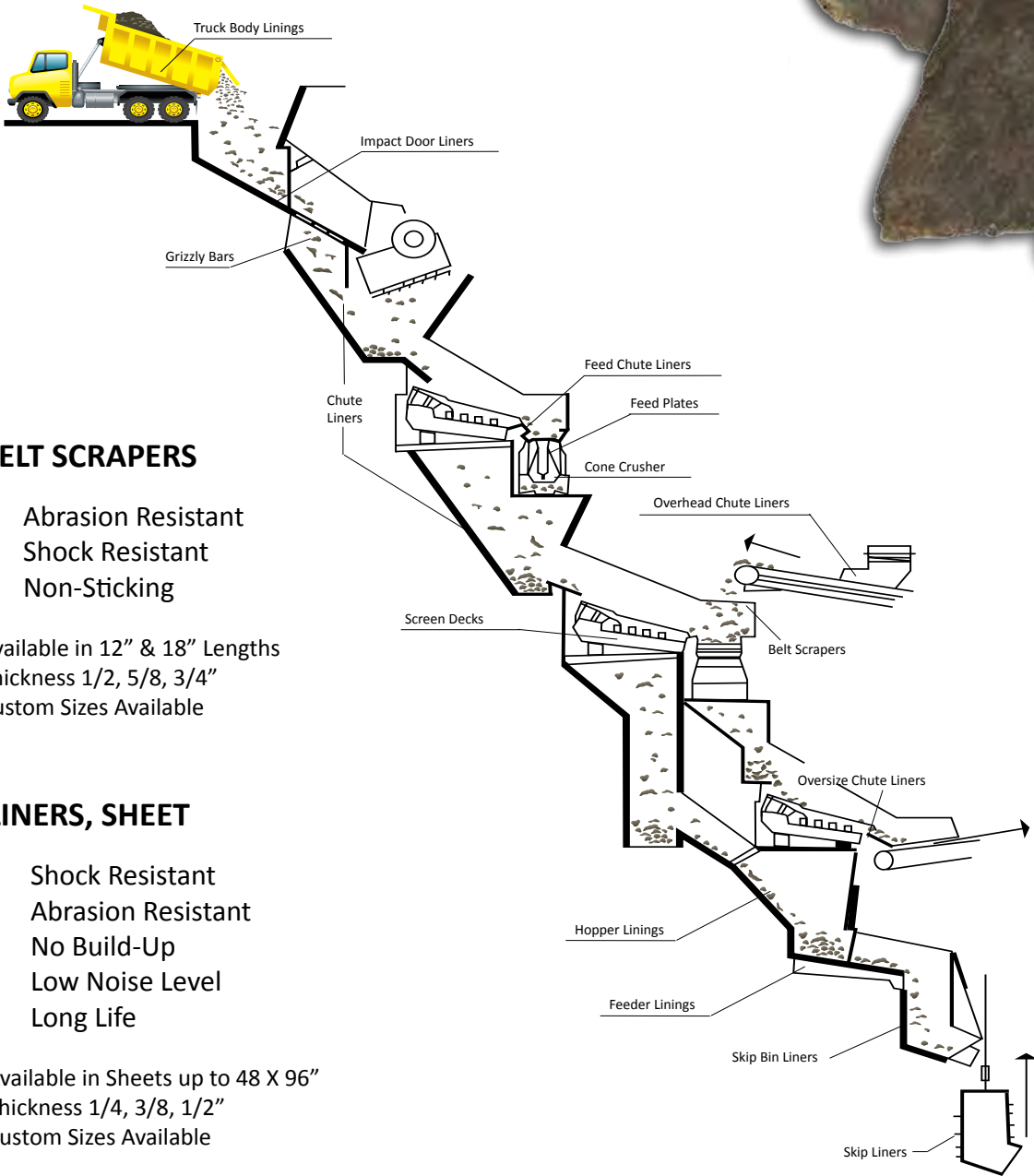
Caution: This chart depicts generalities and does not take into consideration the specific gravity of the material being handled, the shape of the particle whether it be sharp, angular or round, and the velocity or distance of fall.

Redco™ Polyurethane and Redco™ Tivar® conveyor liners for hoppers, bins, chutes, etc., are designed to provide flow solutions for the bulk material handling industry. They feature low coefficient of friction, excellent sliding abrasion and corrosion resistance.

\* Redco™ TIVAR® liners are usually used in sliding or flow applications where impact and impingement are not a concern.

Typical grades of Redco™ Polyurethane used are:  
Redco™ 6060 - High Impact/Large Particles/High Volume.  
Redco™ 430 - High Volume/Smaller Particles.  
Redco™ 80A - Small Particles

[www.redwoodplastics.com](http://www.redwoodplastics.com)



### BELT SCRAPERS

- Abrasion Resistant
- Shock Resistant
- Non-Sticking

Available in 12" & 18" Lengths  
Thickness 1/2, 5/8, 3/4"  
Custom Sizes Available

### LINERS, SHEET

- Shock Resistant
- Abrasion Resistant
- No Build-Up
- Low Noise Level
- Long Life

Available in Sheets up to 48 X 96"  
Thickness 1/4, 3/8, 1/2"  
Custom Sizes Available

MAX. PARTICLES SIZE	MIN. RECOMMENDED THICKNESS FOR A GIVEN FREE FALL								
	0-2'	3'	4'	5'	6'	8'	10'	12'	15'
1/8" - 1/4"	1/4"	3/8"	3/8"	1/2"	1/2"	1/2"	1"	1 1/4"	1 1/2"
3/8" - 1/2"	1/4"	3/8"	1/2"	1/2"	3/4"	3/4"	1 1/4"	1 1/2"	1 3/4"
3/4" - 1"	1/2"	1/2"	3/4"	3/4"	1"	1 1/2"	1 3/4"	2"	2"
2"	1/2"	3/4"	3/4"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"
4"	3/4"	1"	1 1/2"	1 3/4"	2"	2 1/2"	2 3/4"	3"	3 1/2"
6"	1"	1 1/2"	1 3/4"	2"	2 1/2"	2 1/2"	3"	3 1/4"	4"
8"	2"	2"	2 1/2"	3"	3 1/2"	4"	4"	5"	6"
10"	2"	2 1/2"	3"	3 1/2"	4"	4"	4 1/2"	6"	8"
12"	3"	3"	3 1/2"	4"	4 1/2"	4 1/2"	6"	8"	10"

# PIPES, SPOUTS, CHUTES...

## GRAIN PROCESSING

Improve the quality of your grain product and increase production by eliminating arching, ratholing and grain segregation with a pipe, spout or chute lining solution designed by Redwood Plastics.

REDCO™ TIVAR® 88 LINERS are ultra slick and abrasion resistant. They also improve material flow and eliminate production hold-up because of material building up in places within your production process. For more demanding lining applications with severe sliding and high load applications REDCO™ TIVAR® CERAM P® will reduce wear and prolong equipment life.

Large or small, Redwood Plastics can design the most optimal liner for your application, requiring little or no maintenance, with easy installation.



# SILOS, TRANSITION HOPPERS...

## MINERAL & METAL PROCESSING

Solve your bulk material arching, bridging, segregation, or flooding problems with a lining solution designed by Redwood Plastics. Whether the bulk materials you handle are fine and dusty, caking, cohesive or abrasive, Redwood Plastics will analyze and design a lining solution for your chutes, storage silos, transition hoppers, etc.

REDCO™ TIVAR® 88 LINERS are ultra slick and abrasion resistant; improving the flow of your material. REDCO™ TIVAR® CERAM P® will reduce wear and prolong equipment life in demanding applications with severe sliding and high load applications.



[www.redwoodplastics.com](http://www.redwoodplastics.com)

# RAILCARS, WALL LINERS...

## RAILCARS

Eliminate sticking and material hang-up problems to speed up turnaround times and increase efficient hauling capacity.

Redwood Plastics designs solutions for bottom dump and rotary railcars as well as wall liners to protect cars from structural damage.

By utilizing REDCO™ TIVAR® 88 liners in the bottom of dump railcars or rotary dump railcars, turnaround times can be reduced by as much as 50% and carry-back can be virtually eliminated.



# BUNKERS, DISCHARGE FEEDERS...

## POWER & COAL PLANTS

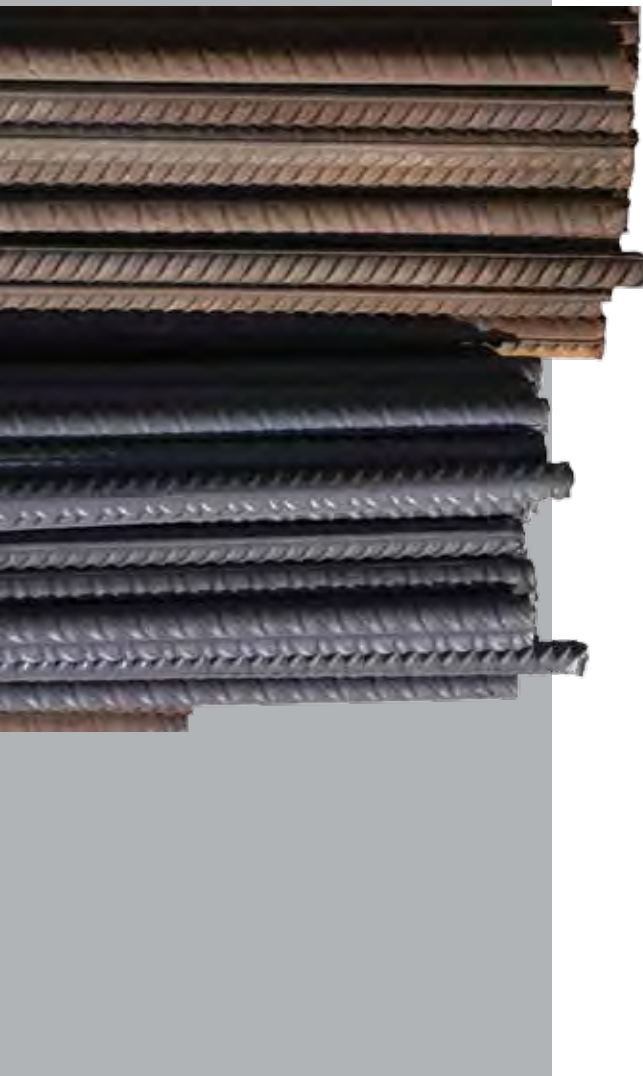
Increase process efficiencies and reduce operating costs with a lining solution designed by Redwood Plastics. Utilizing REDCO™ TIVAR® 88 &/or REDCO™ TIVAR® CERAM P® keeps bulk materials moving by eliminating arching and ratholing. REDCO™ TIVAR® 88 with BURNGUARD™ has flame retardant properties and self extinguishes when the source of combustion is removed. REDCO™ TIVAR® 88 with BURNGUARD™ meets MSHA 1C-112/1 for underground mining and has a UL94 V-0 flammability rating.

REDCO™ TIVAR® 88 liners are ideal for bins, bunkers, hoppers, chutes, silos, discharge feeders, etc., helping you achieve mass flow, increase output capacity, and eliminate coal stagnation.

Stagnant coal problems increase your risk of spontaneous combustion, REDCO™ TIVAR® 88 liners eliminates congestion, so your product flows smoothly and consistently, helping the plant maximize electrical output and reduce safety and maintenance issues.







## STEEL MILLS

Eliminate mass flow problems in discharge hoppers that fill ore cars and hoppers with coal into ovens with lining solutions designed by Redwood Plastics. REDCO™ TIVAR® 88 &/or REDCO™ TIVAR® CERAM P® liners are available for bins, bunkers, chutes, discharge hoppers, etc., that promote consistent, reliable flow, reducing or eliminating variations in final product quality.

## CEMENT PLANT

REDCO™ TIVAR® 88 &/or REDCO™ TIVAR® CERAM P® liners eliminate arching and ratholing during cement processing. With its low coefficient of friction, REDCO™ Lining Systems promote consistent flow; resulting in consistent cement quality. Redwood Plastics designs unique application specific lining solutions for chutes, hoppers, pan feeders, etc., that promote mass flow.

## CHEMICAL PLANT

Limited funnel flow, material build-up, segregation and fine particle abrasion/corrosion slows production. Redwood Plastics has a lining solution to eliminate these problems and achieve mass flow. REDCO™ TIVAR® 88, REDCO™ UHMW & REDCO™ TIVAR® CERAM P® liners can be installed into units; including bins, silos, tanks, as well as, feeders and piping for liquids, powders and solids.

## PACKAGE HANDLING PLANT

Hang ups are hold ups that cause frustrations and stop production. Worn paint and gummed up rollers slow down packages and cause congestion.

Paint on liners wear out quickly and cause damage to rollers and packaging and require continual cleaning and dusting, increasing maintenance costs.

REDCO™ TIVAR® DRYSLIDE keeps packages moving; even on humid days, and has been proven to save weeks of downtime per year in replacement and maintenance costs. REDCO™ TIVAR® DRYSLIDE is long wearing with an ultra slick surface and antistatic properties.

- Under belt wear strips
- Diverter bars
- Transfer plates
- Dead plates
- Belt skirting



[www.redwoodplastics.com](http://www.redwoodplastics.com)

# CHUTES, HOPPERS, BUCKETS...

## COAL, COPPER, DIAMOND & GOLD MINING

Build up in chutes and hoppers can block the flow of materials, halting production and increasing labour costs. Frozen and sticking materials within buckets and hauling equipment increases carry back and wastes labour time with extensive clean up. Costly equipment also incurs damage that can be prevented with a Redco™ Tivar or Redco™ Polyurethane liner.



### REDCO™ TIVAR® 88

With a high coefficient of friction, materials flow smoothly and become virtually maintenance free.

Redco™ TIVAR® 88\* with BURNGUARD™\* has flame retardant properties; self extinguishing when the source of combustion is removed.

Redco™ TIVAR® 88\* with BURNGUARD™\* meets MSHA 1C-112/1 for underground mining and has a UL94 V-0 flammability rating.

Redco™ TIVAR® 88\* liners are ideal for bins, bunkers, hoppers, chutes, silos, discharge feeders, etc., helping you achieve mass flow, increase output capacity and eliminate stagnation.

### REDCO™ POLYURETHANE

Redco™ weldable polyurethane liners are used throughout the mining industry in transition hoppers, holding bins, turn-head liners and spouts to reduce material sticking, reduce noise and provide protection to equipment.

Modular shapes can be designed from your drawings so no machining is required.

Redwood Plastics will aid in the appropriate material thickness and formulation. Solid metal backings are also available.

Redco™ Polyurethane bolt-in-place liners are recommended for transition hoppers, discharge chutes, feed boxes, trough linings and virtually any area steel wear or noise is a problem.



# PREMIUM TRUCK LINERS

A Redco™ Liner will give you controlled and precise material placement so you can confidently know your load is exactly where you want it. Stop wasting money with carry back and increase the number of loads per day. Eliminate trailing mounds; put that material right where it's needed.

Lower dump angles means less wear and tear on your hoist, no leaky fluids from exposed cylinders. Redco™ Liners will reduce the need to slam dump reducing wear on all your major parts like brakes, tires and hoist. Liners also eliminate premature box wear, no more washboard floor.

## Gravel, Rock, Excavation Residue

REDCO™ TIVAR 88 TRUCK LINERS eliminate material hang up concerns in a variety of environments and applications; including gravel, road cinders, wet and frozen soil, limestone and leaves.

REDCO™ TIVAR 88 TRUCK LINERS withstand high impact with two times the wear of steel and four times the wear of aluminum for on-road, off-road or heavy equipment trucks.

## Clay, Coal, Fertilizer

REDCO™ DURAPRO® continuous length, seamless dump body liners release sticky materials such as clay, coal fly ash or fertilizer in the very best and very worst conditions, eliminating costly flow agents, reducing labor costs and increasing the number of loads hauled each day.

- Provides steady release of bulk materials
- Abrasion, corrosion and chemical-resistant
- High impact strength
- Weighs less than aluminum or steel
- Economically priced



## Asphalt

Guaranteed At Any Temperature

REDCO™ QUICKSILVER® TRUCK LINERS are specially formulated, super slick, abrasion resistant and guaranteed to withstand any temperature asphalt. In hot or cold environments REDCO™ QUICKSILVER® TRUCK LINERS release sticky materials, meaning faster load release, less equipment damage, reduced chance of tip-over, less wear on hoists, minimal clean-up and reduced downtime.

- Medium and heavy duty liners
- Superior, steady release of materials
- Abrasion, corrosion and chemical-resistant
- High impact strength
- Outlasts traditional materials
- Weighs less than aluminum or steel

\* Asphalt Plant Chutes, Bins, & Hoppers can also be lined to obtain maximum flow.



A Redco™ Liner prevents roll-overs by dumping every load consistently at a greatly reduced dump angle.

Drivers can stay in their cabs, reducing the risk of injury.



**ROAD CINDERS  
LIMESTONE  
WET SOIL  
ASPHALT  
GRAVEL  
ROCK**

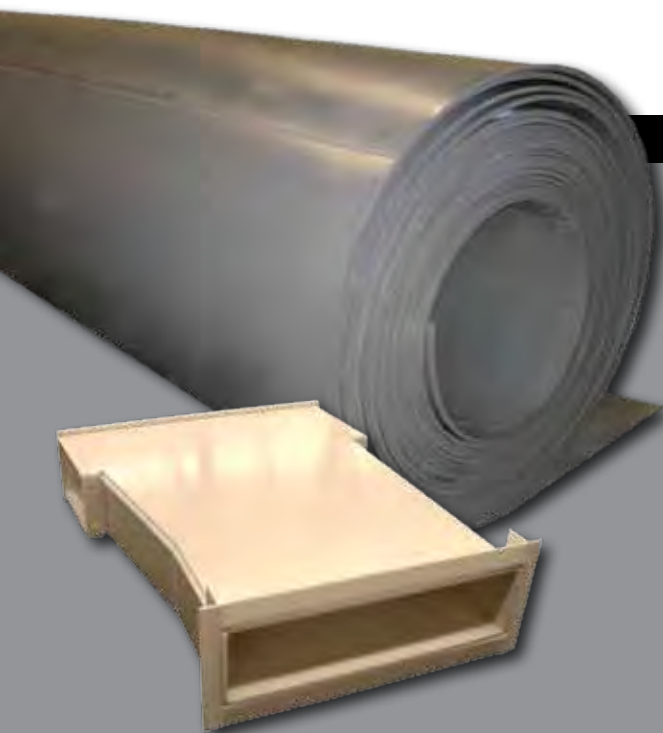


[www.redwoodplastics.com](http://www.redwoodplastics.com)





[www.redwoodplastics.com](http://www.redwoodplastics.com)



**CONTACT US TODAY**

**CDN 1 800 667 0999**

**USA 1 866 733 2684**

**[sales@redwoodplastics.com](mailto:sales@redwoodplastics.com)**



We cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. We accept no responsibility for results obtained by the application of this or the safety and suitability of our products, whether alone or in combination with other products. Users are advised to make their own test to determine the safety and suit ability of each such product or product combination for their own purposes. Unless otherwise agreed in writing, we sell the products without warranty, and buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of our products, whether used alone or in combination with other products. For most recent technical information, phone 360 225 1491 in USA or 604 607 6000 in Canada.

\*REDCO™ is a registered trademark of Redwood Plastics Corporation, TIVAR®, CERAM P®, QUICKSILVER® and DRYSLIDE® are registered trademarks of the Quadrant Group of Companies

Printed in Canada

**LINING SOLUTIONS**