Products in use: EN30 & 7TQSDX1

CUT AND WEAR PROTECTION

Selection of Sling Protection Products

Sling protection products need to be used in applications where sling damage may occur. Cutting of synthetic slings during use is the number one cause of sling accidents. A variety of factors influence sling protection performance. Since no material is fully cut proof, a qualified person must select materials and methods that adequately protect slings from edges or surfaces. *Lift-All* can assist customers with their product selections.

⚠ WARNING

Exposure of sling to edges with a radius that is too small can cause sling failure and loss of the load. Always protect synthetic slings from being cut or damaged by corners, edges, and protrusions using protection sufficient for each application.

Cut Protection versus Wear Protection

Lift-All sling protection products are divided into two categories, Cut Protection and Wear Protection. **Cut Protection** products are designed to improve workplace safety. When placed between slings and edges, cut protection products act as a buffer to prevent sling cutting and to reduce bearing pressure levels at contact areas. **Wear Protection** products serve to extend sling life by reducing abrasive wear and preventing the marring of load surfaces. The following table provides comparative sling protection performance for standard *Lift-All* products:

Product	Ordering Code	Thickness	Image / Color	Relative Cut Protection Performance Rating
CUT PROTECTION				
Sling Shield™	SS	1" Radius		
Edge Defender™ 3-Ply Polyester Flat Quick Sleeve	ED	0.45		
***Edge Defender* Sling Sleeve** Polyester Tubular Quick Sleeve	TQSPED	0.39		
***Edge Defender* Flex Plus** Flat Quick Sleeve w/*Dyneema*®	FQSD	0.35		
Edge Defender Flex Plus Tubular Quick Sleeve w/*Dyneema*	TQSD	0.24		
COMMON LOOSE WEAR PROTECTION MATERIALS				
***Webmaster*® 1600 Nylon**	N	0.14	Yellow	
***Dyneema* Sleeving** (Light Duty Single Wall)	-	0.054	White	
Pukka (Synthetic Felt)	P	0.33	White	
Heavy Leather	HL	0.13	Tan	
PVC	PVC	0.17	Black	
SEWN-ON TYPE WEAR PROTECTION				
***Webmaster* 1600 Nylon**	N	0.14	Yellow	
Pukka (Synthetic Felt) Pads	P	0.33	White	
Heavy Leather Pads	HL	0.13	Tan	
PVC Pads	PVC	0.17	Black	

Performance Rating: The bar graphs shown above reflect the comparative performance of *Lift-All* Cut Protection products against commonly used loose and sewn-on types of Wear Protection products.

Test Lift Qualification: To validate the suitability of sling protection products for each application, always complete one or more test lifts in a non-consequence manner. Technical Bulletin MS-10 is available for additional information.

EDGE DEFENDER™ SLING SLEEVE

Tubular Cut Protection Pad

(Code: TQSPED)

US Patent 9,597,996
Canadian Patent 2,900,438

The *Edge Defender* Sling Sleeve is the go-to option for web sling cut protection. The Sling Sleeve offers concentrated cut protection of *Lift-All*'s patented *Edge Defender* technology and *Kevlar*® aramid binding at the base of the pad. The tubular quick sleeve design uses Cordura to enclose the web sling, providing 360° securement to the sling.

Features and Benefits

- **Patented Technology:** Incorporates patented *Edge Defender* cut protection technology, offering a high level of cut protection while flexible enough to conform to the shape of the load.
- **Streamlined Fit:** The use of *Velcro*® offers a streamlined fit which allows the pad & sling combination to fit through relatively tight spaces.
- **Snug Fit:** The snug fit allows for the pad to remain in position until it is intentionally repositioned.
- **Ease of Inspection:** May be easily removed or adjusted to view web sling for inspection purposes.
- **Flexibility:** Provides better flexibility when compared to the flat *Edge Defender*.
- **Economical Design:** Cost effective when compared to other products with a similar level of cut protection.

Part Number	Max Web Sling Width (in.)	Max Sling Plies	Open Width (in.)
TQSPED2	2	2	6
TQSPED2B		4	8
TQSPED3	3	2	8
TQSPED3B		4	10
TQSPED4	4	2	10
TQSPED4B		4	12

Note: Standard pad length is 12"

EDGE DEFENDER™

Flat Style Cut Protection Pad

(Code: ED)

US Patent 9,597,996
Canadian Patent 2,900,438

The *Edge Defender* product line is patented technology constructed with multiple layers of polyester with *Kevlar*® aramid binding. The *Edge Defender* has become the new standard in edge cut protection for guarding synthetic slings. Protect your loads and your slings now by using the *Lift-All Edge Defender*.

Features and Benefits

- **Cut Protection:** The patented technology creates a high level of compression on the surface to produce a superior level of cut protection.
- **Conforms to the Shape of Load Edges:** The flat design will conform to the shape of the load during handling operations, yet the construction is firm enough to prevent wrinkling.
- **Construction Materials:** *Edge Defender* is made of polyester with *Kevlar* aramid binding.
- **Ease of Attachment:** The use of hook and loop straps allows quick attachment and helps to hold position on slings.
- **Ease of Sling Inspection:** The open design allows easy access to slings during frequent inspections.
- **Available Sizes**: Available in a variety of lengths and widths.

Standard Lengths (L) Include 12", 18", 24", 30", 36"

Part Number Example
ED3X12IN

Max Pad Width (in.)	Appropriate Sling Sizes			Part Number*
	Web Sling Width (in.)	Endless *Tuflex*®	*KeyFlex*™ *DynaFlex*™	
		Double Leg		
3	2	30	-	ED3XL
4	3	60-90	-	ED4XL
6	4	120-150	10K-20K	ED6XL
8	6	180-240	25K-50K	ED8XL
10	8	280-600	60K-90K	ED10XL
12	10	800-1000	100K-125K	ED12XL

* Replace "L" with standard length. Example: ED3X12IN.
Note: For sling sizes not shown on the table contact *Lift-All*.

EDGE DEFENDER™ FLEX PLUS

US Patent 9,597,996
Canadian Patent 2,900,438

Lift-All's *Edge Defender* Flex Plus made of *Dyneema*® fiber is woven to provide cut protection suitable for handling loads with straight, curved or non-uniform shaped edges. 'Flex Plus' has an additional double-plied layer of *Dyneema* with *Kevlar* ® aramid binding. These pads are thinner, lighter and more flexible than the standard *Lift-All Edge Defender*, yet maintain the same level of cut protection performance.

Features and Benefits

Maintains all the basic *Edge Defender* features plus...

- **Lighter and More Flexible:** With the use of high modulus *Dyneema* material, this lighter 'Flex Plus' version of the flat *Edge Defender* is almost twice as flexible and maintains the same high level cut protection performance.
- **360° of Protection:** The tubular *Edge Defender* Flex Plus is well-suited for use with roundslings and affords uniform cut protection around the exterior of the sling body.
- **Pad Positioning:** When sized properly, the tubular style offers protection in desired location on slings.
- **Proper Placement:** The white *Dyneema* side should be against the edge of load for ultimate cut protection when using the *Edge Defender* Flex Plus.

Edge Defender Flex Plus Flat Quick Sleeve

Flat Style Cut Protection (Code: FQSD)

Max. Pad Width (in.)	Appropriate Sling Sizes			Part Number*
	Web Sling Width (in.)	*Tuflex*®	*KeyFlex*™ *DynaFlex*™	
		Double Leg		
3	2	30	-	**3FQSDXL**
6	4	60-150	10K-20K	**6FQSDXL**
9	6	180-240	25K-50K	**9FQSDXL**
10	8	280-600	60K-80K	**10FQSDXL**
12	10	800-1000	90K-125K	**12FQSDXL**

Standard Lengths (L) Include 1', 18", 2', 30", 3'

Part Number Example
3FQSDX1 or 3FQSDX18IN

* Replace "L" with standard length. Example: 3FQSDX1 or 3FQSDX18IN
Note: For sling sizes not shown on the table contact *Lift-All.*

Edge Defender Flex Plus Tubular Quick Sleeve

Tubular Style Cut Protection (Code: TQSD)

Max. Pad Width (in.)	Appropriate Sling Sizes					Part Number*
	Web Sling Width (in.)	Endless *Tuflex*®		*KeyFlex*™ / *DynaFlex*™		
		Single Leg	Double Leg	Single Leg	Double Leg	
4.5	1	-	-	-	-	**4TQSDLXL**
7	2	30-60	-	-	-	**7TQSDXL**
8	-	90-150	30-60	10K-30K	-	**8TQSDXL**
10	3	180-240	90-120	40K-50K	10K-20K	**10TQSDXL**
13	4	280-360	150-180	60K-80K	25K-30K	**13TQSDXL**
16	6	460-1000	240-360	90K-175K	40K-80K	**16TQSDXL**
20	8	-	460-800	200K	90K-125K	**20TQSDXL**
23	-	-	900-1000	-	150K-175K	**23TQSDXL**
26	10	-	-	-	200K	**26TQSDXL**

Standard Lengths (L) Include 1', 18", 2', 30", 3'

Part Number Example
4TQSDX1 or 4TQSDX18IN

* Replace "L" with standard length. Example: 4TQSDX1 or 4TQSDX18IN
Note: For sling sizes not shown on the table contact *Lift-All.*

***Kevlar* is a registered trademark of E.I. du Pont de Nemours and Company**

SLING SHIELD™

US Patent 9,039,337
Canadian Patent 2,846,325

Sling Shields are constructed with a low-weight, high-strength aluminum center bar and offer the highest level of cut protection for standard products. *Sling Shield* provides a 1" bend radius to protect slings from sharp load edges and sustain sling tensions up to 25,000 pounds per inch of sling contact width. Hook and loop strips hold the sling in place and a magnetic surface retains position on the steel load. *Sling Shields* are suited for loads having a straight contact edge, such as I-Beams. Stop replacing your synthetic slings and wear pads due to cutting; use *Lift-All Sling Shields*.

Features and Benefits

- **Magnetic:** Holds position against steel loads for ease of rigging.
- **Cut Protection:** *Sling Shields* provide a very high level of cut protection, supporting sling tensions of up to 25,000 pounds per inch of contact width.
- **1" Bend Radius:** The design provides a bend radius to reduce bearing pressures for synthetic slings.
- **Construction Materials:** *Sling Shields* are made of high strength extruded aluminum bars.
- **Ease of Attachment:** The use of hook and loop straps allow quick attachment.
- **Sling Position:** Polycarbonate end retainers keep slings positioned on the *Sling Shield*.
- **Ease of Sling Inspection:** The open design allows easy access to slings during their frequent inspections.

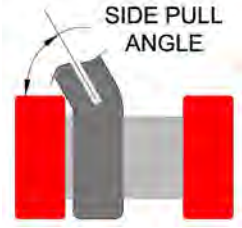
Part Number	*Sling Shield* Dimensions			Appropriate Sling Sizes				
	Inside Width (in.)	Overall Length (in.)	Weight (lbs.)	Web Sling Width (in.)	Endless *Tuflex*®		DynaFlex™ / *KeyFlex*™	
					Single Leg	Double Leg	Single Leg	Double Leg
SS12	2.50	4.50	2.2	2	30-180	30-90	10K-30K	10K
SS14	4.50	7.50	2.7	4	240-360	120	40K-80K	15K
SS16	6.75	10.00	3.2	6	460-1000	150-240	90K-100K	20K-40K
SS112	12.75	16.00	4.8	12	460-1000	280-1000	90K-100K	50K-100K
SS118	18.75	22.00	6.4	18	460-1000	280-1000	125K-200K	125K-150K

Note: For sling sizes not shown on the table contact *Lift-All.*

LOAD RATINGS

The load rating for a *Sling Shield* is 25,000 lbs. of sling tension per inch of sling width. This rating is reduced when lifting at sling angles of less than 70°.

- Do not exceed listed sling tensions.
- Prevent *Sling Shield* from sliding when using at an angle.
- Do not use at side pull angles less than 45°.
- See Safety Bulletin for more detailed information (included with each product at time of purchase).



Side Pull Angle	Basket Choker Rating (lbs.)*
65°	17,500
60°	15,000
55°	13,000
50°	11,000
45°	8,000

* Ultimate rating regardless of width.
Note: Lifting in a vertical hitch reduces the ratings by half.

WEAR PADS

The Importance of Wear Protection

Wear Protection products like wear pads extend the life of slings by reducing exposure to abrasion and other similar forms of damage. Wear pads also help protect load surfaces from damage along points of contact, particularly when used with steel slings. **Always inspect slings by following the safety bulletin provided with each sling.**

Features and Benefits

- **Sling and Load Damage Protection:** Wear Protection can help to protect both the sling and the load from wear damage.
- **Construction Materials:** A variety of padding materials are available to best suit the needs of each application.
- **Available Sizes:** Available in a variety of lengths and widths.
- **Ease of Attachment:** Some styles use hook and loop fastening to allow quick attachment and to help keep the position on the sling.
- **Ease of Sling Inspection:** Length selection and other pad options are available that allow easy access to slings for frequent inspections.

Edge Guard
Texturized Buffer

Flat Quick Sleeve
Pukka Pad Material

Sewn-On Wear Pad
Texturized Buffer

Tubular Quick Sleeve
Webmaster® 1600

Flat Sewn Sleeve
Webmaster® 1600

Poly Pad
PVC

SLEEVE TYPE
Preferred for slings that are used in a variety of lifting situations. Easily repositioned along sling body to accommodate loads of various sizes. Sleeve allows sling to adjust to lift without movement against load edge.

	Use With	Available Materials	Features & Benefits
Tubular Quick Sleeve	*Tuflex*® Roundslings Chain & Wire Rope	All (except PVC)	High strength hook & loop sleeve for secure positioning. Tubular design gives maximum usable surface and maximum pad life.
Flat Quick Sleeve	All Slings	All (except PVC)	Hook & loop sleeve allow easy installation and removal. Friction keeps sleeve in place when rigging.
Flat Sewn Sleeve	All Slings	All (except PVC)	Preferred for long-term use on single sling. May be repositioned along sling length. Factory installation for slings with hardware and single leg *Tuflex*.
Poly Pads	Web Slings	PVC	Slides easily along sling length for convenient sling protection. Factory installation for web slings with hardware.

SEWN-ON TYPE
For use on web slings where repetitive lifting situations expose the sling to damage. Eliminates the need to position pad before each lift.

Sewn-On Wear Pad	Web Slings	All (except ballistic nylon)	For sling protection at expected wear points. Can be sewn anywhere on the sling, be any length and be on one or both sides.
Edge Guard	Web Slings	Texturized Nylon Light Leather	Helps protect both edges of the sling. Placement on the sling per customer is required.

WEAR PAD MATERIALS

Pukka-Pads (P)

A high-density polyester felt.

0.3125" Thick

Heavy Leather (HL)

Genuine top-grain cowhide. May require multiple pieces.

0.1563" Thick

PVC Belting (PVC)

Non-absorbent conveyor type belting.

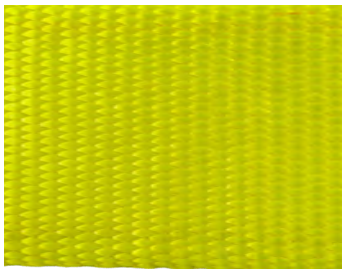
0.125" Thick

Texturized Buffer (TN)

A bulked fiber is used to produce a thin webbing with good abrasion resistance.

0.09375" Thick

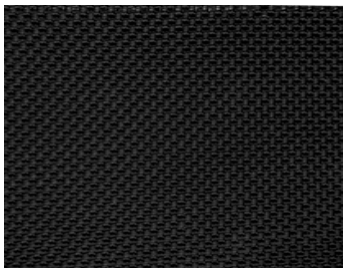
Webmaster® 1600 Nylon (N)



Nylon (N)

0.1875" Thick

Ballistic Nylon (BN)



A 2-ply wear resistant fabric made of bulked nylon fiber, appropriate for wider sleeves.

0.0625" Thick

HOW TO ORDER WEAR PROTECTION

1. Choose code for width and style

Replace # with desired pad width. Example: 4TQS

#TQS	Tubular Quick Sleeve
#FQS	Flat Quick Sleeve
#SS	Flat Sewn Sleeve
_____	Poly Pad*

* Use part numbers found in the Poly Pad section.

To order Edge Guard or Sewn-On wear pads specify at the time of ordering.

2. Choose a Material

P	5/16" Heavy Duty Pukka-Pad
N	*Webmaster*® 1600 Nylon
HL	Heavy Leather
TN	Texturized Buffer
BN	Ballistic Nylon (Tubular only)
PVC	(Sewn-on Wear Pads only)

3. Length of Sleeve

(If sewn-on pad, describe position on sling)

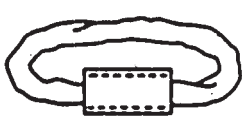
_____ Feet

4. For Use On

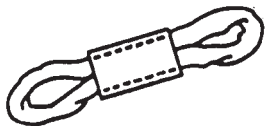
_____ Web Sling (Code or Width)

_____ *Tuflex* _____ Single-Leg (Code) _____

_____ Double-Leg (Code) _____



Single-Leg



Double-Leg

_____ Chain Sling Size _____ inches

_____ Wire Rope Sling Dia. _____ inches

* **⚠ WARNING** Wear pads may not prevent cutting or other sling damage. To avoid severe personal injury or death, keep all personnel clear of loads about to be lifted, and suspended loads.

WEAR PROTECTION

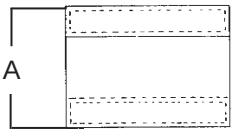
FLAT QUICK SLEEVES

Flat Quick Sleeve Widths & Appropriate Sling Sizes

Part No.	Sleeve Width[1] (in.)	Web Sling Width[2] (in.)	*Tuflex*®				*DynaFlex*™ *KeyFlex*™		Wire Rope Sling Dia. (in.)	Chain Sling Size (in.)
			Single Leg	Double Leg	6-Part Braid B6E	8-Part Braid B8E	Single Leg	Double Leg		
3FQS	3	1	-	-	-	-	10K	-	1/4 - 7/16	-
4FQS	4	2	30-60	30	-	-	15K-20K	-	1/2 - 3/4	7/32 - 9/32
5FQS	5	3	90-150	60	-	-	25K-30K	10K	7/8 - 1-1/8	3/8
6FQS	6	4	180-240	90-120	30	-	40K-80K	15K-20K	1-1/4 - 1-1/2	1/2
8FQS	8	6	280-460	150-240	60	30	90K-125K	25K-30K	1-3/4 - 2-1/4	5/8
10FQS	10	8	600-900	280-360	90-120	60-90	150K-175K	40K-80K	2-1/2	3/4 - 7/8
12FQS	12	10	1000-1100	460-600	150-180	120-150	200K	90K-125K	-	1

[1] Width of sleeve depends on the material being used. This chart is based on using Pukka Pad material.
[2] 1-ply or 2-ply only. For 3-ply or 4-ply, go to the next larger sleeve.
Note: For sling sizes not shown on the table contact *Lift-All.*

TUBULAR QUICK SLEEVES



Tubular Quick Sleeve Widths & Appropriate Sling Sizes

Part Number	Open Sleeve Width[1] (A) (in.)	*Tuflex*				*DynaFlex / KeyFlex*		Wire Rope Sling Dia. (in.)	Chain Sling Size (in.)
		Single Leg	Double Leg	6-Part Braid B6E	8-Part Braid B8E	Single Leg	Double Leg		
4TQS	4	-	-	-	-	-	-	1/4	-
5TQS	5	-	-	-	-	-	-	5/16 - 1/2	-
6TQS	6	30-60	-	-	-	10K	-	9/16 - 7/8	7/32
8TQS	8	90-150	30-60	-	-	15K-30K	-	1 - 1-1/2	9/32 - 3/8
10TQS	10	180-240	90-120	30-60	30	40K-50K	10K-15K	1-3/4 - 2	1/2 - 5/8
12TQS	12	280-360	150-180	90	60	60K-80K	20K-30K	2-1/2	3/4
14TQS	14	460-800	240	-	90	90K-125K	40K-50K	-	7/8 - 1
16TQS	16	900-1000	280-360	120-150	120	150K-175K	60K-80K	-	1-1/4
18TQS	18	1100	460-600	180-240	150-180	200K	90K-100K	-	-
20TQS	20	-	800	-	-	-	125K	-	-
22TQS	22	-	900-1000	360	240	-	150K-175K	-	-
24TQS	24	-	1100	-	-	-	200K	-	-
26TQS	26	-	-	600	360	-	-	-	-
30TQS	30	-	-	800	600	-	-	-	-
34TQS	34	-	-	1000	800	-	-	-	-

[1] Tubular Pukka Pads not available under 10" open sleeve width.
Note: For sling sizes not shown on the table contact *Lift-All.*

* **⚠ WARNING** Wear pads may not prevent cutting or other sling damage. To avoid severe personal injury or death, keep all personnel clear of loads about to be lifted, and suspended loads.

WEAR PROTECTION

STANDARD SEWN SLEEVES

Sewn Sleeve Widths & Appropriate Sling Sizes										
Part No.	Sleeve Width[1] (in.)	Web Sling Width[2] (in.)	*Tuflex*®				*KeyFlex*™ *DynaFlex*™		Wire Rope Sling Dia (in.)	Chain Sling Size (in.)
			Single Leg	Double Leg	6-Part Braid B6E	8-Part Braid B8E	Single Leg	Double Leg		
3SS	3	1	30-60	-	-	-	-	-	1/4 - 3/4	7/32
4SS	4	2	90-150	30-60	-	-	10K-15K	-	7/8 - 1-1/8	9/32 - 3/8
5SS	5	3	180-240	90-120	30	-	20K-30K	-	1-1/4 - 1-1/2	1/2
6SS	6	4	280-360	150-180	60	30	40K-80K	10K-15K	1-3/4	5/8
8SS	8	6	460-800	240-360	90-120	60	90K-100K	20K-40K	2 - 2-1/2	3/4 - 7/8
10SS	10	8	900-1100	460-600	150-180	90-150	125K-175K	50K-80K	-	1
12SS	12	10	-	800-1000	240	180	200K	90K-125K	-	1-1/4

[1] Width of sleeve depends on the material being used. This chart is based on using Pukka Pad material.
[2] Chart is for 1-ply or 2-ply slings. For 3-ply or 4-ply slings, use the next larger sleeve.

POLY PADS

Easily movable poly pads are made of tough, woven polyester fabric impregnated and coated with PVC. Easy to position on both web slings and tiedowns. Poly pads are designed to give protection when lifting around load edges or abrasive loads.

Poly Pads		
Part Number	Poly Pad WxL (in.)	Web Width (in.)
60115	3-1/2 X 12	1 - 2
60116	6 X 12	3 - 4

EDGE GUARD
Texturized Buffer

SEWN-ON WEAR PADS
Texturized Buffer

* **⚠ WARNING** Wear pads may not prevent cutting or other sling damage. To avoid severe personal injury or death, keep all personnel clear of loads about to be lifted, and suspended loads.

INSPECTION CRITERIA FOR SLING PROTECTION

The following information can be used to assist in determining if the sling protection product should be taken out of service. For inspection frequency requirements, see the General Information section of this catalog and the safety bulletin provided with each sling.

EDGE DEFENDER™ & EDGE DEFENDER™ FLEX PLUS

Inspection Criteria

Removal from service criteria:

- Any damage that has penetrated through the red core indicator layer, located below the first ply of webbing material.
- Any heat or chemical damage, i.e. acid or alkali burns, melting or weld spatter.
- Any conditions which cause doubt as to the strength of the *Edge Defender*.
- *Edge Defenders* being used for cut protection should be inspected per the Safety Bulletin.

Avoid actions that can cause damage, such as:

- Chain and wire rope slings may be used with *Edge Defenders* to aid in protecting the condition of load surfaces. However, users should consider that the rate of degradation to the *Edge Defender* may be accelerated when using these types of slings.
- Do not expose to temperatures above 200°F (90°C), or below -40°F (-40°C).
- When not in use, *Edge Defenders* should be stored in an area free from environmental or mechanical sources of damage, such as: weld spatter, machining or sources of UV, heat, or chemical exposure, etc.

SLING SHIELD™

Inspection Criteria

Removal from service criteria:

- Cracks, deformation, corrosion or any other forms of damaged or missing parts.
- 20% reduction of material in any area from abrasive wear.
- Heat or chemical damage, i.e. acid or alkali burns, melting or weld spatter.
- Conditions which cause doubt as to the strength of the *Sling Shield*.
- Additional removal criteria when used with synthetic webbing slings or roundslings: Gouging, pitting or other forms of damage causing a non-uniform or rough surface.

Avoid actions that can cause damage, such as:

- To avoid damaging the aluminum center radial bar, *Sling Shields* are not recommended for use with chain slings.
- Wire rope slings up to a 1” diameter may be used, but wire rope will tend to mar the aluminum surface of the center bar and render it unusable with synthetic type slings. Padding may help prevent this damage.
- Avoid dropping on to hard surfaces
- Do not expose to temperatures above 200°F (90°C), or below -40°F (-40°C).
- When not in use, *Sling Shields* should be stored in an area free from environmental or mechanical sources of damage, such as: weld spatter, machining or sources of UV, heat, or chemical exposure, etc.

WEAR PADS

Inspection Criteria

- Pads and other Sling Protection products being used for wear protection may continue to be used until they are worn through.

Scan and learn more about *Lift-All*'s Cut vs. Wear Protection products.