

The Conveyor

Rubber Ron's Report



More PVC Fabrication

We recently upgraded our PVC machine, which has enabled us to increase our production of curved cleats. Grape harvesters and wineries find these particularly useful. We have 1" - 3" and custom-sized product available.

R & D at R & P

We are in the process of developing a new belt for the recycling industry. Based on a magnetic pulley system found in Europe, the belt will separate fer-

rous from nonferrous metals. It will have a special endless belt with longitudinal cleats. It should be ready for production by mid-August.

Update on the NIBA Convention

The "Gateway to Revolution" is approaching, and I will be heading to Boston September 6-9. We've got everything finalized and it should be a great week. I am especially looking forward to hearing our guest speakers: Connie Podesto, *Difficult People in the Workplace*; Don Reynolds, *How Will Technology Impact the Workplace of the Future?*; and C.W. Metcalf, *Lighten Up: Survival Skills for People Under Pressure*. I hope to see many of you there.

Gina Mazzotta Guides R & P Through Major Computer Conversion

Well, we got through Y2K without a glitch, but now it's time to convert our old accounting software to Rubber Trax. The new package will provide us with a fully integrated accounting and inventory control system. Two to three people won't have to handle your orders anymore, and we will be able to reduce the paperwork. In addition, we will be able to provide you with real-time inventory information and immediate updates on the status of your order whenever you call us.

Gina "Warrior Accountant" Mazzotta joined R & P to take us through the process. Ron gave her the nickname Warrior Ac-

countant because she is battling to get him out of the computer dark ages and into the new century. In the accounting field for the past 11 years, Gina became a CPA two years ago. She is especially skilled in training and troubleshooting computer systems and with QuickBooks setup and support. She hopes to complete R & P's conversion by the end of the year.

R & P Receives Quality Award

A major recycling OEM recently hosted a quality control supplier conference. During the event, they honored R & P with a Certificate of Appreciation for working "to achieve the best quality of product for our machines and for meeting our quality objectives of eliminating rejects and returns."

Several R & P employees deserve credit for the honor and their hard work. Thanks go to our entire production group.



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Employee Profile

R & P's Rodney Roalsen Reaches Out to Customers From Bellingham to Bakersfield ... and Beyond

Rodney Roalsen recently celebrated his fifth year as a sales representative for R & P. However, he started coming to the office long before then. Ever since he can remember, he would be at R & P, after school and on the weekends. His first job was sweeping the floors. He especially liked that duty because when he was done, he could skateboard down the isles. During his high school years and as a full-time employee throughout college, he was a cleat fabricator.

There is never a better measure of what a person is than what he does when he's absolutely free to choose.

—William M. Buler

This experience proved invaluable as he moved into sales after finishing school. Since he's fabricated just about every type of belt R & P offers, he can make helpful recommendations to his customers. One of his specialty OEM manufacturers noted that Rodney "has a hard core understanding of belting." He went on at length about Rodney's service and problem solving skills too.



"Rodney is always right on the ball and responsive to our needs. He has helped to turn what was a high maintenance belting program into a much more manager-friendly one. As a large manufacturer, we use several, nonstandard belts in our processes, and we consume these belts at a rather high rate. As a result, our orders are generally sizable and require a large sum of hard-to-get materials. Before Rodney came along, it would take us anywhere from 8 to 14 weeks to get the belts we needed; we were literally consuming these belts at a rate faster than they could be manufactured. Not only did Rodney figure out a way to get us the belt whenever we needed it, he figured out how to lower the cost of the belts. He has also helped to decrease our on-site inventory of them as well."



Solving customers' problems is the favorite part of his job. And, the favorite part of his life away from R & P is his wife of six years, Julie. Besides their time together, Rodney's into kayaking, skiing, snowshoeing, biking, weightlifting and just about any extreme sports. As he puts it, "Anything outdoors is me."

Call Toll Free: 1-800-234-2358

Domestic Belt Specials

LENGTH	WIDTH	DESCRIPTION
67	54	5/550 II 1/4 X 1/16
151	48	4/440 II 3/8 X 3/16 MOR
375	42	4/440 II 3/16 X 1/16
175	36	4/440 II 3/16 X 1/16
211	30	4/440 II 3/16 X 1/16
156	30	4/440 II 3/16 X 1/16
602	18	4/440 II 3/16 X 1/16
56	42	3/330 II 1/4 X 1/16
86	30	3/330 II 1/4 X 1/16
103	24	3/330 II 1/4 X 1/16
83	24	3/330 II 1/4 X 1/16
53	48	3/330 II 3/16 X 1/16
79	30	3/330 II 3/16 X 1/16
78	30	3/330 II 3/16 X 1/16
112	24	3/330 II 3/16 X 1/16
203	48	3/330 MOR 1/8 X BB
62	48	3/330 MOR 3/16 X 1/16
338	36	3/330 MOR 3/16 X 1/16
108	36	3/330 MOR 3/16 X 1/16
240	30	3/330 MOR 3/16 X 1/16
101	36	2/220 II 3/16 X 1/16
63	36	2/220 II 3/16 X 1/16
50	36	2/220 II 3/16 X 1/16
50	30	2/220 II 3/16 X 1/16
33	24	2/220 II 3/16 X 1/16

Call R & P for other lightweight belt specials.

Call Toll Free: 1-800-234-2358

PIW, EP, and ST – What is the Difference?

Introduction

You are busy at your desk when someone calls and asks you for the equivalent of a 4-ply, EP 3800 conveyor belt. You respond, “No problem, I’ll make a quick conversion and get right back to you.” After hanging up, you realize that the answer is not so simple. Should you give the answer in PIW, EP, or ST? Do you need to consider the safety factor?

To resolve this common problem, we must be aware that most of the world (except for the U.S.) classifies belts with the metric system and ultimate breaking strength. Sometimes, the metric system is identified by the International System of Units (SI). In addition, fabric belting is referred to in letters such as EP and PP, with other combinations of steel belting referred to as ST.

To simplify the discussion, we outline the definitions of the yarns used in most belt carcasses for either system in Table 1.

DEFINITION	U.S.	METRIC
Fabric		
Polyester	P	E
Nylon	N	P
Carcass		
Poly-nylon	PN	EP
Nylon-nylon	NN	PP
Poly-poly	PP	EE

Table 1. Fabric Designations

As you can see, we must be careful when using letters to designate the yarns. The conflict arises because of what the letters stand for in each system. In the U.S., “P” stands for polyester and “N” for nylon. Elsewhere, polyester comes from ethylene glycol, thus the “E,” and nylon from polyamide, giving it a “P” designation. Therefore, if you want an equivalent for a metric EP belt, you would select the poly-nylon, or PN. Sometimes, metric fabric belts are incorrectly referred to as EP class belts even when they are all nylon or some other fabric combination.

Besides the difference in the carcass yarn definitions, the EP designation differs from PIW in two other important ways:

1. EP means breaking strength (not rating).
2. EP means metric units (N/mm).

Carcass Tension Rating

In the U.S., the term carcass tension has many definitions, but the NIBA version is probably the most appropriate. NIBA defines it as the “maximum safe working tension recommended by the manufacturer.”

This means that the belt manufacturer determines the maximum tension that can be applied to the belt after reviewing the physical properties of the carcass. The tension units are PIW or LB/In-width when they are all nylon or some other fabric combination.

In the metric system, all tension values are in breaking strength, not operating tension. For example, an EP 800 construction is 800 N/mm breaking strength. The operating tension, after converting to metric (assuming a 10:1 safety factor) would be 80 N/mm or 457 PIW.

In the U.S., a steel cord belt is rated PIW, just like a fabric belt. In the metric world, the steel cord belt is designated ST (steel) and like the EP designations, is in breaking strength (N/mm). See Table 2.

ITEM	UNITS	DESCRIPTION	SYSTEM
PIW	LB/In-Width	Max. Operating Strength	U.S.
EP	N/mm or Kn/m	Breaking Strength	Metric
ST	N/mm or Kn/m	Breaking Strength	Metric

Table 2. Carcass Designations

continued on other side

PIW, EP, and ST – What is the Difference? (cont.)

Method for Conversion

To convert from EP to PIW, multiply the EP by 5.71 to give the breaking strength. Then, divide this number by the safety factor (SF) to give the rated belt PIW. You can use this formula for both fabric and steel cord belts.

Example

Convert EP 1000 to PIW (assuming 10 SF)

$$\frac{(1000 \text{ N/mm} \times 5.71)}{10 \text{ SF}} = 571 \text{ PIW}$$

Likewise, to convert from PIW to EP, do the reverse.

$$\frac{(571 \text{ PIW} \times 10 \text{ SF})}{5.71} = 1000 \text{ N/mm}$$

Safety Factors

It is also important to be aware that safety factors generally vary in each system (see Table 3).

ITEM	SAFETY FACTOR
PIW	8 TO 12
EP	10
ST	5 TO 8

Table 3. Generally Accepted Safety Factors

Summary

If you want a simple conversion table for quick reference, refer to Table 4. It provides an easy way for you to convert back and forth between the metric and U.S. systems. Locate the safety factor of the belt in question, move to the column description that you want to convert, and then multiply by the indicated number. (Note: We included 6.67 because it is the most common SF for steel cord belts around the world.)

Safety Factor	EP to PIW	PIW to EP	ST to PIW	PIW to ST
	Multiply by	Multiply by	Multiply by	Multiply by
12		2.10		
11		1.93		
10	0.571	1.75		
9		1.58		
8		1.40	0.714	1.40
7			0.816	1.23
6.67			0.856	1.17
6			0.952	1.05
5			1.14	0.876

Table 4. Conversion Between U.S. and Metric Systems

If you need any assistance with a conversion, don't hesitate to call R & P for help.

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