

# PACO

## WORLD

Our International  
Wire&Mesh Magazine  
for Existing and  
Prospective Customers

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## Everything Depends on the Rating and the Feeling!

Dear Reader!

The car industry started the ball rolling by giving each of their suppliers a "rating". To begin with, everything revolved around "quality". But since all of the talk about "Basel II", the word "rating" has taken on a new meaning that goes far beyond quality considerations. The fundamental principle is the systematic reduction of risks – for banks in particular, the minimization of credit risks. This should sound familiar to us, because when we look at our own everyday lives we have to admit that we all make our own ratings – for instance, with our choice of supermarket or workman? The same is true for companies that order goods and services. With each new order, there is a re-evaluation of the relationship between price and performance, overall reliability, the willingness of the supplier to satisfy individual needs and, last but not least, the "feel-good factor". All in all, a feeling of confidence in your supplier is an essential part of any successful working relationship.

The right feeling is largely based on your own experience or trustworthy references from third parties.

Our continued success at PACO, even in the difficult times that the world economy is experiencing at present, is proof that our customers feel good with us. And the number of new customers that we have gained not only demonstrates that we are interested in tailoring specific solutions for our customers, but also that we have excellent references. We would, therefore, like to thank all of our existing customers including, of course, all of our new customers that, on the basis of their ratings, have developed a positive feeling towards us and have given us their confidence. Consequently, our mission for 2003 is to give each of our customers and partners a service that is sure to provide an even better rating and feeling in the coming years.

Best regards  
Peter Ruppel  
Managing Director



## With PACO into the Neo-Ice-Age: A Fail-Safe Valve for the "Zeolithic Period"!

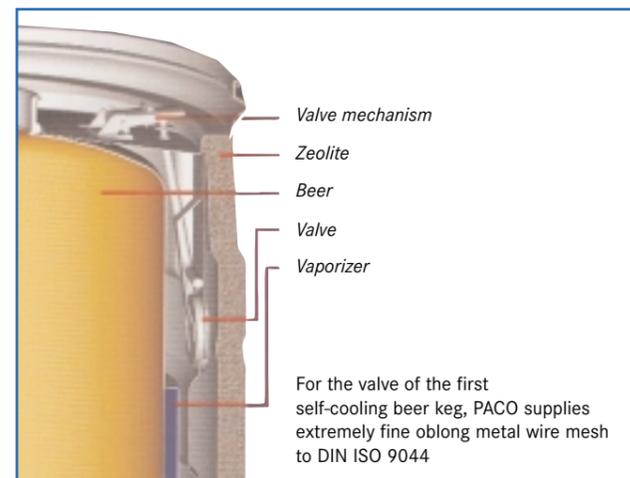
Did you know that a mineral could generate heat and, at the same time, keep something cold? In other words, be a form of refrigerator compressor made of small stones. As soon as we received the enquiry that confronted us with this technology, we were electrified. The potential of the idea convinced us so much that we poured our available resources into developing a reliable valve that would allow "ZEO-TECH" products to be re-used as often as possible. After all, being innovative means to introduce something new.

### ZEO-TECH – a "Hot and Cold" Innovation

You have heard of the Neolithic period – the last phase of the stone age. You have also heard of the glacial period in the Pleistocene epoch – commonly known as the ice age. And now we have entered the "Zeolithic Period" – the age of minerals known as zeolites. These have a crystalline structure that can draw-in and absorb water vapour from the air. During this physical process, a zeolite will emit warmth at a high temperature. If this reaction occurs in a vacuum, the technical requirements for a new "ice age" are given. When a valve is opened, the vapour is drawn in so violently that the evaporative cooling can cool water to such an extent that ice is produced – i.e. with the correct technology, zeolites can

generate an "ice age" anywhere and at any time. It is, therefore, no surprise that more and more inventors, researchers and engineers are looking at ways of practically and economically applying this effect – whether it be for the cooling of party beer kegs or for large-scale industrial freeze drying.

ZEO-TECH is not only economically viable, it is also environmentally friendly: it needs no chemicals and has an even to positive energy balance.



### PACO as "Infinite" Innovation Partner

A particular strength of certain zeolites is that there is almost no limit to the amount of times that they can absorb water and release it again, when heated – a characteristic fundamental for the economic use of ZEO-TECH. In the case of the party beer keg, ZEO-TECH is put into practice by using a multi-walled container with cavities filled with either a zeolite-crystal in a vacuum or with a water-soaked

(continued on next page)



## Hundreds of Thousands Drink to PACO



The self-cooling ZEO-TECH party beer keg is an environmentally friendly, returnable solution that is already in circulation more than a hundred thousand times – each unit containing PACO's high precision stainless steel wire fabric. The example of the "Tucher" brewery illustrates the broad market possibilities of this innovative technology.

**Express Delivery of Ice Cold Beer**  
What is worse than when you are extremely thirsty and the beer is too warm? And what is more expensive

and frustrating for a keg beer supplier than the long-drawn-out procedure of cooling to drinking temperature and then having to immediately transport the kegs to where they are needed by an ever-increasing amount of thirsty people? The elegant solution to this problem is the "CoolKeg" offered to its customers by the Tucher brewery based in Fürth, Germany. This innovation cools the beer in a 20 litre keg down to 7 to 9° C (standard – for markets like the US Cool-Keg's with 3–5° C will be available shortly), for optimum enjoyment, in just 45 minutes – without a cold store

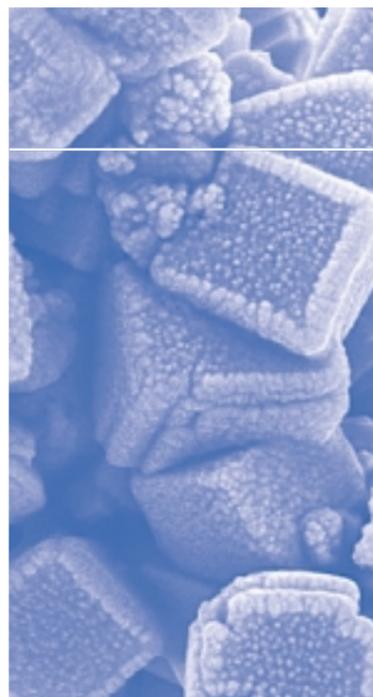
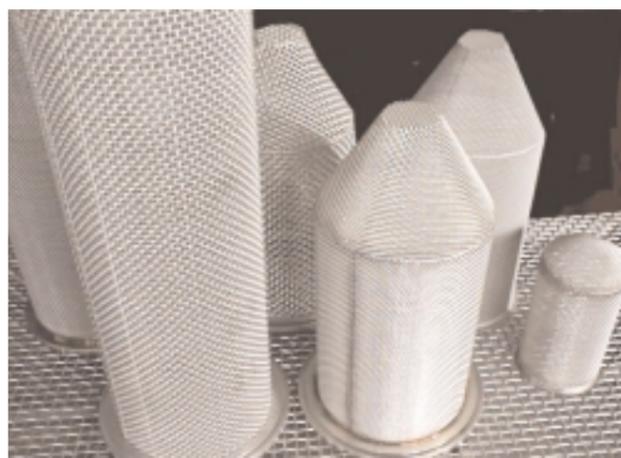
and without a fridge. Following this, the beer is constantly kept at this temperature for a period of 24 hours! What is also amazing is that the keg feels warm on the outside although its contents are ice cold. Surely a physical "trick" that would interest Las Vegas magicians such as Siegfried and Roy. The real happy end is, however, still to come: when the CoolKeg has been tapped dry, it can be sent back to the brewery, where it is heated to desorb the water and make the zeolite fit for another round. And PACO is always there with the stainless steel mesh membrane in the valve system.

*continued from page 1*

## A Fail-Safe Valve for the "Zeolithic Period"

fleece. After use, the empty party keg is "regenerated" in an oven – i.e. dried and evacuated before being re-filled with beer. So that this procedure can be repeated a hundred times or more, a very powerful, fail-safe and robust valve is necessary. An important component of this valve is a membrane made of extremely fine stainless steel mesh that can retain even the smallest mineral particles while, at the same time, ensuring that the water vapour can easily enter. Together with the vessel manufacturer that holds the patent for the keg, PACO has developed and patented a valve as well as making to ISO 9044 the required oblong mesh metal wire fabric out of extremely fine stainless steel wire.

PACO filter restrainer baskets are one of the "pillars" of countless production processes – economic and ecological advantages included.



## Zeolite – The Story of a Miracle Corn

The name "Zeolite" was coined as far back as the middle of the 18th century by the Swedish mineralogist A.F. von Cronstedt. Although only an amateur, he recognized that certain minerals gave off a lot of water when heated and thus appeared to "cook". As was usual back then, he derived the name for his discovery from the ancient Greek, namely Zeolite which can approximately be translated as "cooking stone". It was, of course, not until much later that someone found out how the water got into the stone and also what the physical possibilities of this phenomena were. Today, the word "Zeolite" describes

a group of crystalline metal-aluminosilicates. An outstanding characteristic of these minerals is the large inner surface of more than 1000 m<sup>2</sup> per gram: an explanation for their capability of absorbing large amounts of water vapour. Zeolites are non-toxic, non-flammable, naturally available in large amounts and can be commercially produced at a relatively low cost. Today, approximately 1.3 million tons of Zeolites are produced, primarily as catalysts for crack processes, as paper fillers, as dehumidifiers for double-glazed windows and as softeners for washing agents.

## PACO Filter Restrainer Baskets: Supporting Precision and Economy

In a number of branches of industry – from food processing through to pharmaceutical production – filter bags are used for purification and product filtration. For a number of years PACO has been supplying an ever increasing variety of standard as well as customer-specific restrainer baskets.

Filtration with filter bags is, for example, carried out to protect devices or systems from particle accumulation or to ensure that inter-

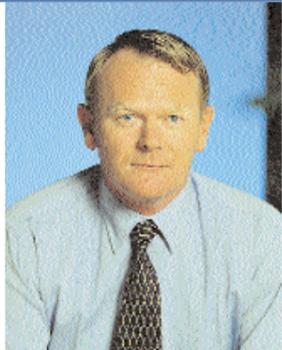
mediate or final fluid products achieve a definite freedom from particles. A filter bag system primarily consists of three parts: the cylindrical vessel with lid, the filter basket that absorbs the impellent pressure difference and the filter bag. The latter is generally a fine filtering media with single or multiple thread meshes made of fabrics that use polyamide, polypropylene, viscose or wool as basis material. As the filter bags have no stability in themselves, restrainer baskets are required as supporting elements. PACO produces restrainer baskets in the necessary sizes and specifications for all standard devices on the market. The materials of choice are robust PACO stainless steel meshes. On special request, however, PACO perforated metal sheets with an application-specific hole pattern can also be ordered. The range for high and low pressure

applications includes the usual standard sizes I and II as well as special designs using fine filters mesh made of PACO stainless steel mesh with a pore size of 3 µ. The filter baskets are plasma or micro-plasma welded, dipped and passivated or electropolished. They are available with a dished, pointed cone, truncated cone or flat base.

For safety filtration as well as for suspensions, PACO produces special sieving basket filters. The standard restrainer basket is fitted with stainless steel meshes that have a specific mesh size that can filter particles that are smaller than 3 µ. In these versions, the restrainer basket becomes a re-usable filter element.

**Further information**  
[www.Paco-online.com](http://www.Paco-online.com)

# "Some Customers Want Us to Help Them with Their Drying."



## Interview with Peter Ruppel about filter elements for drying plants

### Mr. Ruppel, what is so special about filter elements for drying plants?

Drying is one of the most important chemical processing unit operations. In particular, fluid-bed drying offers high efficiency and performance through its large specific surface while, at the same time, having the capability to provide an optimum mix of the product and carrier. Moist products with a water content of up to 85% can be gently dried using this procedure. The special thing about the filters that are used is that they have to be special. It is almost impossible to buy filter elements for such specialized processing technology operations off the peg. Each application has its own peculiarities.

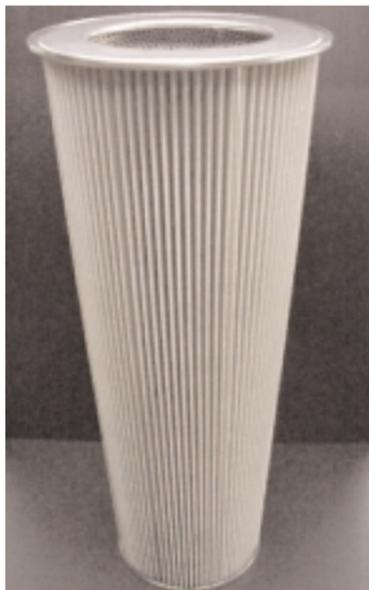
### Can you give us a practical example of such an application?

A practical example is the pharmaceutical industry. So that a high degree of fineness can be achieved, it is becoming more and more common to dry powders out of suspensions or solutions. The reason for this, among other things, is to optimise the bioavailability and dissolubility of the pharmaceutical biocatalysts. Because of the high quality standards placed on drugs and medicines, the filters that are used have to be reliable and of a high quality.

### What does such a production process in the pharmaceutical industry look like in practice?

When producing large amounts of biocatalysts, for example in generic production, the emphasis is placed on continuous processes – primarily for cost reasons. Multifunction systems based around a fluid bed perform the processing operations drying, spray drying, spray granulating, agglomeration and coating. This produces powders as well as pourable products such as granulates, agglomerates and pellets. An important economic factor in such production processes is that the filters in the processing system can be regenerated.

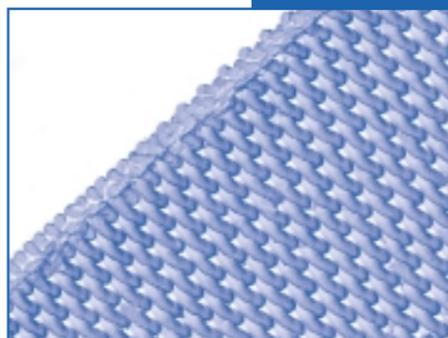
**And where does PACO come in?**  
PACO is the market leader when it comes to regeneratable filter ele-



"Drying" is one of the fundamental chemical processing unit operations. PACO filter elements draw from extensive processing know-how.

ments for drying plants. PACO supplies, for example, the metal filter elements for large-scale plants with automated integral liquid purification. In such systems, the filters are the determining factor for how well the total purification system works.

**That sounds like a big responsibility. What know-how can you draw upon?**  
PACO has closely worked together with leading plant manufacturers for a number of years now – particularly when new or further developments are required. Consequently, we have acquired considerable know-how in this field. We develop the necessary



## PACO's Short Guide to Weaving

### 5. Dutch Twilled Weave (DTW)

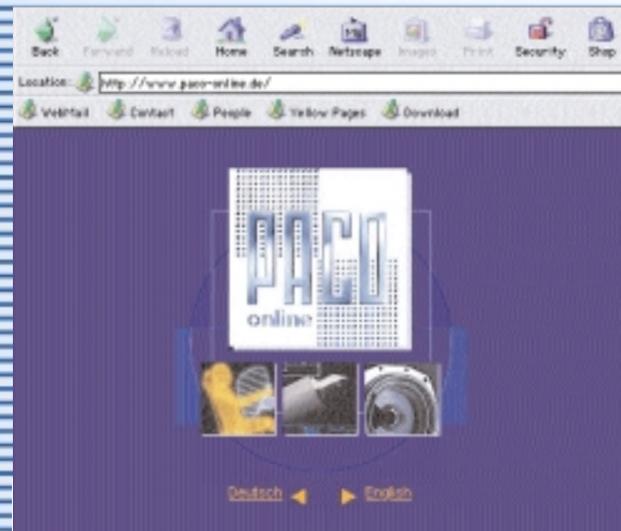
In this issue we want to take a look at another type of dutch weave – the dutch twilled weave, or DTW for short.

With this type of weave the weft wires are arranged extremely closely together, whereby – as is typical of a twill – the thinner weft wires cross two thicker warp wires. This means that double the number of weft wires can be woven than is the case with a plain weave – for increased filtering precision, albeit with a higher flow resistance.

PACO dutch twilled weaves allow an extremely accurate level of filtration such as, for instance, is necessary in the pharmaceutical industry. This advantage is inherently accompanied by a lower throughput.

PACO dutch twilled weaves are used, among other things, for pressure filters in the fine filtration of hydraulic control systems, for fuel filters in critical applications, for pressure and vacuum filters (disc, rotary, drum filters) as well as a porous medium for moving bed applications. Due to the long production times, all PACO dutch twilled weaves are produced as stock items which, in general, allows relatively short delivery times. The items thus available are made of the commonly used materials 1.4306 (AISI 304-L) and 1.4404 (AISI 316-L). If required, however, special orders using materials such as nickel, incoloy or Hastelloy® can also be fulfilled.

Visit us Online!  
[www.paco-online.de](http://www.paco-online.de)





## Herolz Extension: Looking into the Future



The PACO weaving mill at the Herolz plant employs 71 people in two shifts. 14 members of staff work in the company's own mechanical engineering division to produce a PACO weaving machine every six weeks. The PACO HM-L series are produced for our plant in Steinau where fine wire meshes with a wire size of 0.016 to 0.05 are woven. The PACO HM-S series are produced for the weaving of intermediate meshes with a wire size of 0.05 to 0.13 mm and the PACO HM-SS series are intended for heavy-duty meshes with a wire size of 0.3 to 1.4 mm.

At the beginning of October 2002, after a construction period of seven months, the fourth phase of the PACO weaving mill at Herolz was commissioned. With a floor area of 1,600 m<sup>2</sup>, additional production capacity employing the latest in materials management concepts has been created. The primary purpose of the plant is the preparation of warps – i.e. beaming (warping) and threading. The previously used area has been converted and completely renovated to provide an additional area of 900 m<sup>2</sup> for the further extension of the weaving mill. In contrast to the generally gloomy mood, in not only the German economy, PACO is backing growth. By increasing our capacity now, we will be prepared to secure an even larger share of the market when the economy picks up.

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## Steinau a.d. Straße: Clubbing Together at a Fairy Tale Fair!

We have already reported about how the people in and around Steinau a. d. Straße know how to work well and also throw a good party. This time around we would like to shed a little more light on this subject with some background information.

Once again, at the end of November, the Brothers Grimm town of Steinau hosted the historic *Katharinenmarkt* (Catherine's Fair) – incidentally the 712<sup>th</sup>. The pleasant smell of mulled wine, gingerbread and herb-flavoured sweets drifted, together with thousands of visitors, though the *Brüder-Grimm-Straße*. There were, of course, a number of stalls run by full-time traders offering clothing, household items and hot grilled sausages as well as roundabout rides for the children. The attraction of the fair was made, however, by the stalls run by local

clubs and groups of residents. Starting with the local carnival club, through the allotment gardeners association to the voluntary fire service, they offered food and drink as well a variety of home-made items. On the stall run by the Steinau Youth Club you could enjoy hot juice, cocoa and freshly baked waffles. A spread of over 70 home-baked cakes was to be



found on the stall jointly run by both Steinau Kindergartens and the children's day-care centre. This "sugar-cake land" was organised by parents



and parents' associations. The money raised through the sales of the cakes served as a donation to the three institutions – and consequently Steinau's children. A town that clubs together in this way can surely look forward to a prosperous future.

## 100<sup>th</sup> Machine Commissioned!

A few weeks ago the PACO HEROLZ mechanical engineering division handed-over their 100<sup>th</sup> in-house produced weaving loom for commissioning. Despite the tendency in some areas of the industry to import meshes from low-wage countries with the accompanying risk of lower quality, PACO is determined to uphold quality standards now and into the future. They know that whoever stops trying to get better will stop being good.



## Bits and Pieces

### "The Source of Money is Unknown"

Excerpts from "A Brief Outline of Economics"  
by Peter Panter alias Kurt Tucholsky (1931)

Economics is when people ask themselves why they don't have any money. ...

One has to laugh at the older economies. They reigned from 715 before Christ to the year 1 after Marx. Since then the question has been answered completely: the people still don't have any money but at least they know why.

The basis of all economies is the so-called "money". .... With money you can buy goods because it is money and it is money because you can buy goods with it. In the meantime, however, this theory has been abandoned. The source of money is unknown. It is simply there or not there – usually not there. The paper money that is in circulation is guaranteed by the state, this means that each individual in possession of paper money can go to the central reserve bank and demand gold for their paper. And they can. The top central reserve bank officials are obligated by law to have gold fillings for the exchange of paper money. This is called the gold cover. ....

*Kurt Tucholsky (1890 – 1935) is one of the most important German journalists and writers. He became particularly famous as a satirist. In 1933 the Nazis stripped him of his German citizenship and burnt his books. His satirical writings attempted to defend the democratic constitution of the Weimar Republic by making fun of its shortcomings. He died in exile by committing suicide.*