



Uponor

**UPONOR PEX PRODUCTION
INDUSTRIAL**

Great opportunities, few limitations
Uponor Industrial Applications

Whatever you need to transport, Uponor Industrial Applications can usually make the process easier and more efficient



Which
properties
are you
looking for?

Uponor Industrial Applications stand for Wirsbo-inPEX pipes, pipe components and pipe systems for industrial applications. In most situations where you need to transport fluids, powders or granulates, Uponor Industrial Applications can help you simplify and improve, and reduce costs. Whether you are transporting hot, cold, corrosive, abrasive or exceptionally clean materials, and almost regardless of demands imposed by the surrounding environment.

Uponor Industrial Applications withstands high temperatures, pressures, vibrations and chemicals. The material is also electrically insulating and low in weight. Combined with our specialists' knowledge, experience and resources, the material can bring substantial savings and entirely new development and production possibilities

The secret is in the material

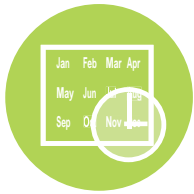
The basic Wirsbo-inPEX-pipe is made from extra-high molecular weight HD polyethylene. At high pressure and temperature, chemical bonds – a network of cross-links – are formed between the polyethylene's long molecular chains.

The three-dimensional network that this creates gives a new material with superior characteristics. The same basic material is used for distributing drinking water without risk of water damage, reliable sprinkler systems and effective underfloor heating systems, where the pipes' durability and long-term stability mean they can be built in permanently.

More durable, easier and lower overall cost – these are just some of the advantages

Each unique characteristic of Wirsbo-inPEX pipes opens up new opportunities for simplification and higher efficiency. And also opportunities to do entirely new things. Start with your own requirements and your own imagination, then add some of our specialists' expertise. You're guaranteed to be impressed by the rapid results.





Long-term stability

Few materials have undergone such extensive long-term testing as one in the Wirsbo-inPEX pipes. Ten years continuous pressure testing at 95°C and an uninterrupted long-term test since 1972 are just two examples. The material has been well tried and tested in many different applications over a long period of time.



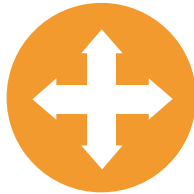
Thermal memory

When the pipes is heated to its softening temperature, the material reverts to its original shape. This characteristic is used to give a very reliable method for shrink-mounting sealing devices, for example.



Withstands corrosive chemicals

Chemicals that can cause cracks in ordinary plastic pipes do not affect Wirsbo-inPEX pipes. The material is resistant to the majority of chemicals, even at high temperatures.



Flexible

The flexibility of Wirsbo-inPEX pipe is yet another advantage compared with metal pipes. There is no need for expensive expansion bellows or their equivalents.



Withstands high temperature

The pipes can be used at a working temperature of 95°C, but withstand 120°C within time and pressure limits.



Low environmental load

Wirsbo-inPEX is a material with low environmental impact during both manufacturing and energy recovery.



Sound-absorbing

The pipes absorbs sound, which means you can transport solid materials, e.g. wood-chips, without the risk of loud noise levels.



Low weight

Wirsbo-inPEX pipes weighs just a fraction of an equivalent metal pipe. This is often an advantage, and sometimes a crucial one.



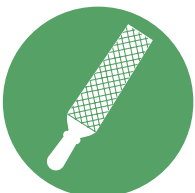
Low friction

The extremely low friction coefficient in Wirsbo-inPEX pipes reduces the pressure-drop in the pipework and minimizes the risk of deposits.



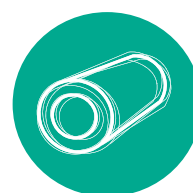
Clean

The pipe does not release any harmful substances. That's why it's also approved for transporting drinking water. The material's exceptional cleanness is also utilized in medical equipment.



Resistance to abrasion

The abrasion characteristics are very good; erosion corrosion does not occur even at high water speeds. That's why our pipes are used to transport highly abrasive sand slurry, for example.



Vibration-absorbing

The pipes absorbs and withstands vibrations. There's no need to combine metal pipes with vibration-absorbing hoses or connectors, giving you higher reliability and lower costs, particularly during installation.



Electrically insulating

The electrical insulating characteristics of the pipe are on a par with the best insulating materials. The material is nonpolar and also totally free from impurities.



Withstands extreme cold

The pipe material has unchanged impact strength even at temperatures below -100°C. This characteristic is exploited in refrigeration systems for ice rinks, for example.



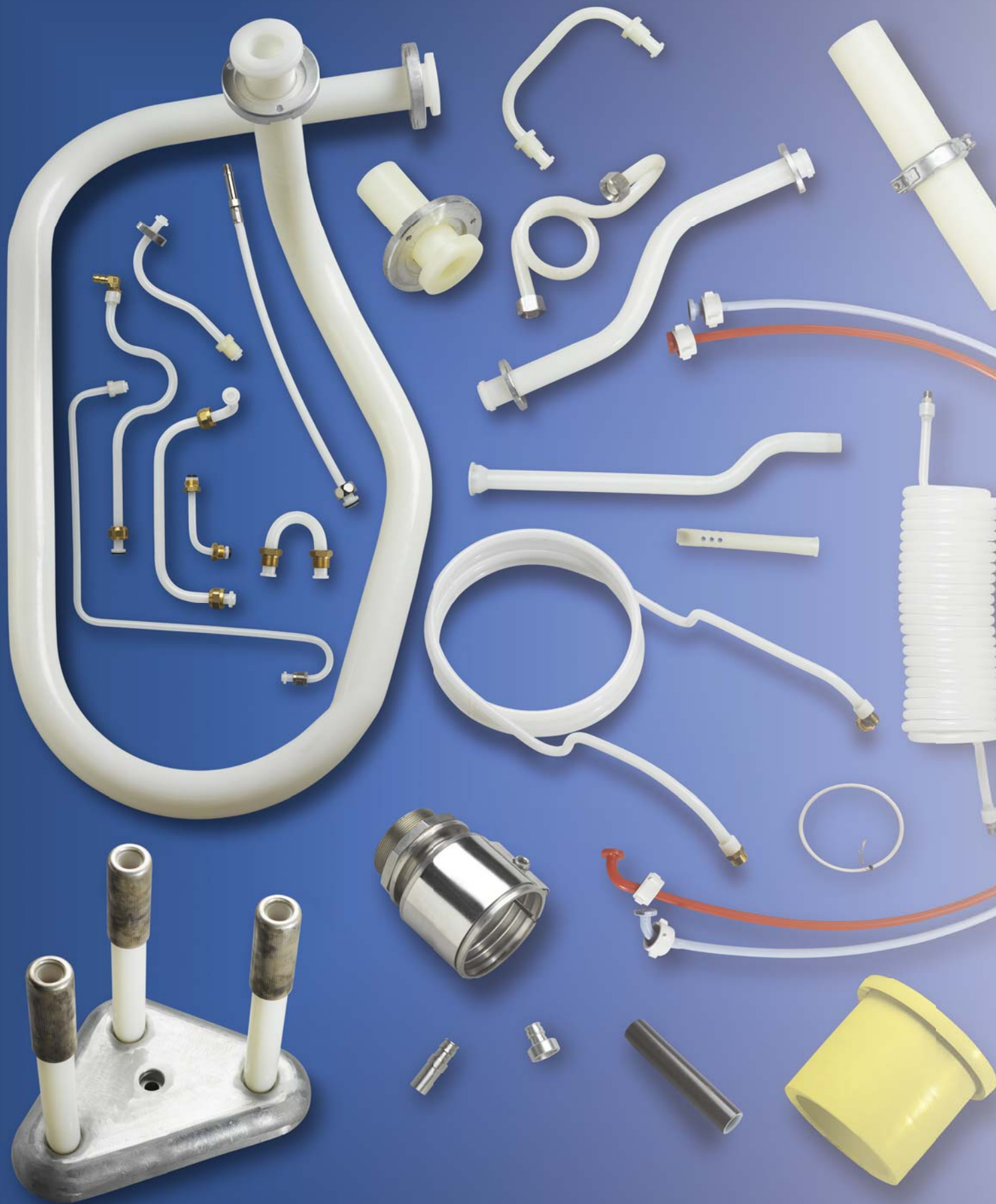
Scratch-resistant

The pipe withstands scratches without being weakened because it is resistant to crack growth. This characteristic makes it possible, for example, to locate pipes directly in stony ground without expensive groundworks.



Ductile

The great freedom to shape Wirsbo-inPEX pipes makes them an excellent replacement for e.g. shaped metal pipes.



The pipe itself is just the beginning

Do you think that tailor-made solutions mean high costs and long development times? Think again! With Uponor Industrial Applications it need not take many days to go from sketch to prototype. Furthermore, we can test your design for bursting pressure, pressure drop, temperature changes, climate, abrasion, etc., in our test lab.

With Uponor Industrial Applications, the superior characteristics of the pipe itself – low weight, and resistance to temperature and chemicals, for example – are just the beginning. The really big savings come when you utilize the material's characteristics and our competence, resources and experience. You can do entirely new things, or integrate several functions in the same component, e.g. using integrated collars that eliminate the need for sleeves or costly and complicated connectors. You save money by reducing the number of components, and you save even more with reduced installation costs.

Our involvement doesn't end when our product is in place. When our pipes are used in an application where high reliability is crucial, we also offer service and support of the same exceptionally high quality as the pipe itself.

Wirbo-inPEX pipes can be made in most sizes, in lengths up to thousands of metres and in a very wide range of wall thicknesses. It can also be made with a coloured surface finish, and self-coloured in selected colours. Fittings are available for Wirbo-inPEX pipes in both metal and plastic for different requirements and applications. For example, Q&E is not only quick and easy to use but also strong and safe. Another example is the WIPEX fitting, which is also available in acid-resistant steel for particularly demanding applications.

Our knowledge can be your competitive advantage, and our resources can be your strength

Uponor Industrial Applications is part of Uponor, the world's largest manufacturer of plastic pipes, with a turnover of more than 1 billion euros and approximately 4100 employees. This means that no one has greater product development resources than we do, and no one has greater resources to help you utilize the characteristics of Wirbo-inPEX pipes to improve and simplify your business and reduce your costs. As the leading supplier, we purposefully develop product systems designed to meet society's environmental and energy requirements.

Large resources are invested in research and development, which is often carried out in close co-operation with our partners and customers. We also take great responsibility for environmental safety and operational reliability. Environmental work is one of the group's guiding lights, and is an integral part of our whole business. We are certified in accordance with ISO 14001 and ISO 9001 to guarantee high demands on quality and the environment.



The unique characteristics of Wirbo-inPEX pipes, combined with our specialists' knowledge and experience, give you great opportunities to solve specific problems and create new solutions.



Wirbo-inPEX pipes can be made in lengths of up to thousands of metres. This reduces the need for fittings, simplifies installation and reduces costs.



From ultra-clean water to corrosive acids and explosive emulsions

When the Swedish mining company LKAB wanted to charge their blastholes deeper and faster, we developed a reinforced Wirbo-inPEX pipe with thicker pipe walls.



Wirbo-inPEX pipes with integrated end fittings mean that people who buy dishwashers from **Electrolux**, **Asko Cylinda** and **Fisher & Paykel** need not worry about water leaks.

Uponor Industrial Applications was the answer for **Buckman Laboratories** for a demanding chemical transportation installation at **Stora Enso** in Skoghall.

The thermal memory of Wirbo-inPEX pipes enabled **Lögstör** to have a tailor-made range of shrinkable end caps for district heating pipes.



Photo: Stora Enso

Wirbo-inPEX pipes withstands both flexing and vibrations, and was the solution for a flexible heating system fitted into **Scania buses**, for example. Wirbo-inPEX pipes is also used in the cooling system in the **X2000 trains**.

The material in the Wirbo-inPEX pipe is flexible, light in weight and an electrical insulator. It's therefore **ABB's** choice when they need to cool drive systems in ice-breakers, high-voltage cables, transformers and thyristor valves – applications that impose very high demands on reliability.



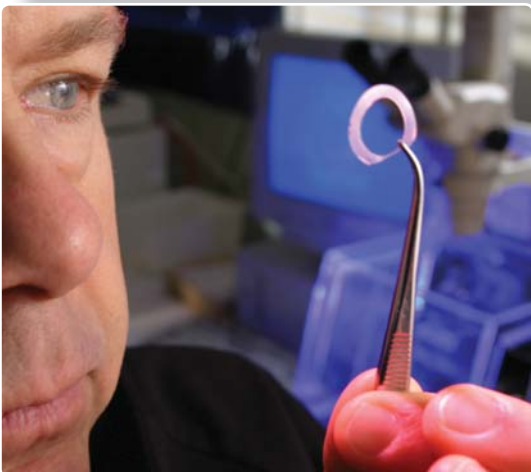
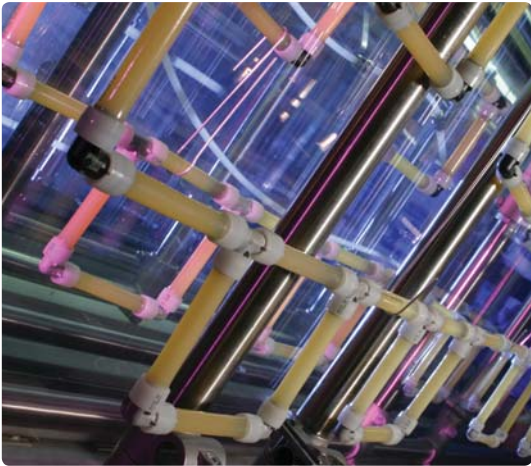
The low friction of the pipe and its resistance to abrasion are ideal when sand slurry is transported from the mines in **South Africa**.

To cool **ABB's** revolutionary Powerformer generator design, we developed, in close co-operation with ABB's engineers, a special thin-walled version of the Wirbo-inPEX pipe that met their high demands for flexibility and reliability.



Tried, tested and certified

We have produced enough Wirsbo-PEX pipes since 1972 to go around the world about 50 times. Nearly all of it is still in service somewhere in the world, in underfloor heating systems, behind washing machines, in hospitals and in countless other applications, particularly in industry. During that time our pipe has been tested, approved and certified in numerous countries for everything from cleanness to strength. But for us, the final proof is still that we fulfil our customers high requirements and expectations.



Minimal impact on our environment

PEX is a material with little environmental impact both when it comes to manufacturing and energy recovery. Complete combustion produces only water and carbon dioxide.



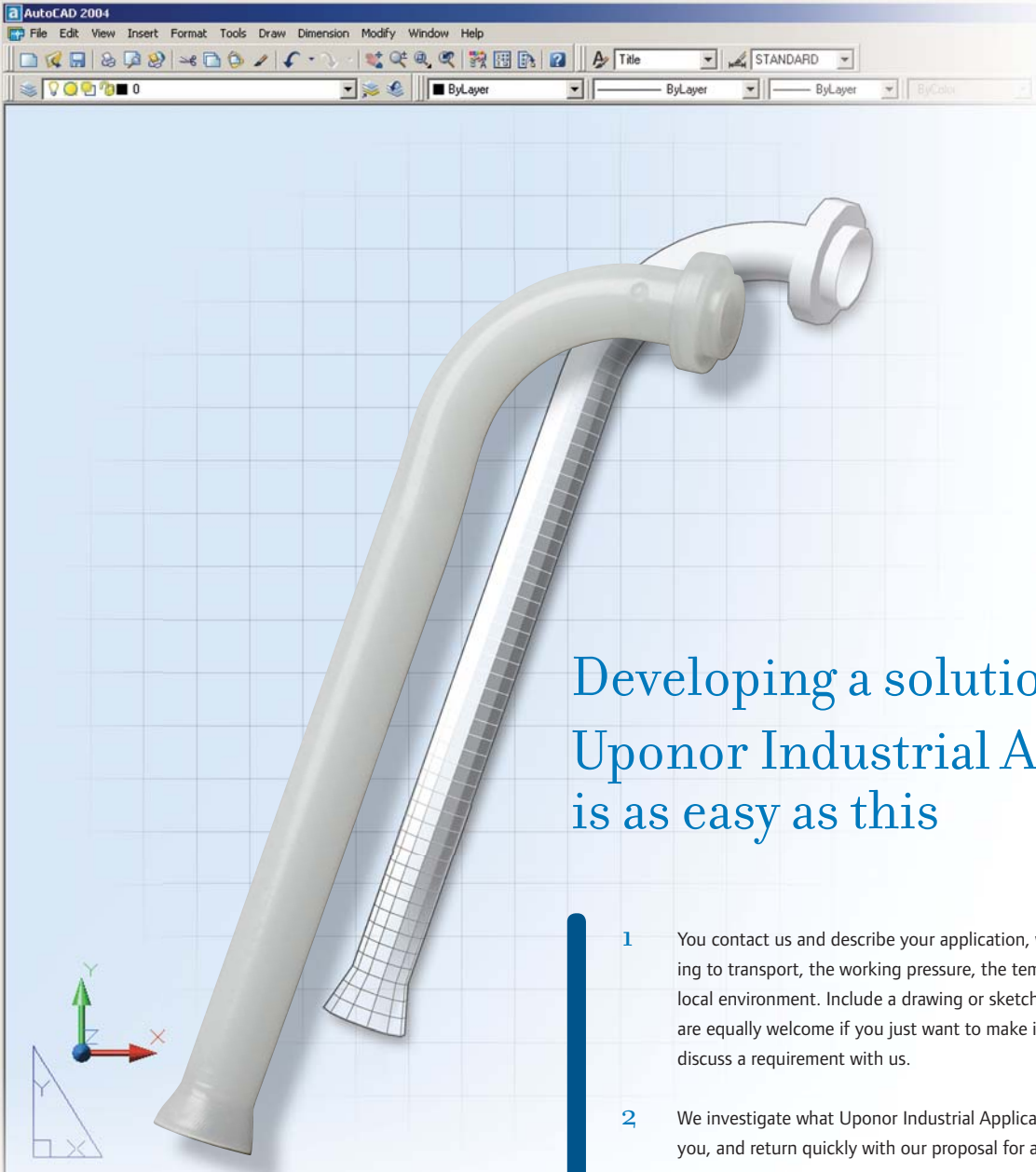
The pipes in Uponor Industrial Applications are so clean that along with the reliable and simple Q&E connector they have been Gambro's obvious choice for more than 20 years. Both in dialysis applications and in other medical equipment.

Uponor Industrial Applications is used in many applications where demands for reliability are very high. One example is power supply, where faults in the cooling of a transformer station or a high-voltage cable can black-out a major metropolitan city such as Shanghai. No wonder that the power industry's world leaders choose to work closely with us.





foto: Stora Enso



In keeping with our policy of continuous improvement and development, Uponor reserves the right to change specifications without prior notice.

Developing a solution using Uponor Industrial Applications is as easy as this

- 1 You contact us and describe your application, what you're going to transport, the working pressure, the temperature and the local environment. Include a drawing or sketch if you wish. You are equally welcome if you just want to make initial enquiries or discuss a requirement with us.
- 2 We investigate what Uponor Industrial Applications could do for you, and return quickly with our proposal for a solution.
- 3 You assess our proposal, and if you want to go further we then meet to deal with the details and any queries. It still won't cost you a thing!
- 4 When we've reached that point, we can produce a quotation for the solution we've discussed.
- 5 When we've agreed the terms, it's time to produce a prototype. You can usually have this a couple of weeks later.
- 6 You evaluate the samples. When you're satisfied, serial production can begin.
- 7 Delivery, evaluation and a review of any opportunities for improvements

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