

HUNTSMAN

Enriching lives through innovation

Polyurethanes

RUBIFLEX® *Cocoon technology*

All that **matters**
combined in
one **mattress**



**HEAT
REGULATION**



**HUMIDITY
CONTROL**



**PRESSURE
DISTRIBUTION**

All that **matters** combined in one **mattress**

What defines optimal comfort, as far as
mattress foam technology goes?

Is it **heat regulation**?

The best **possible humidity control**?

Or **ultimate pressure distribution**?

At Huntsman polyurethanes, we believe
it is all these things...



The foam technology used in our innovative RUBIFLEX® Cocoon flexible foam system
is a different class of technology, beyond the foam technology used in High Resilience
and Visco Elastic (memory) foams.

It combines the main end user benefits of both technologies as well as processing
and supply chain benefits for mattress producers;

Its excellent physical properties make the foam easier to roll/vacuum pack,
store and transport. The low ambient temperature sensitivity enables easier conversion.
The technology in our RUBIFLEX® Cocoon flexible foam system offers a wide range of
formulation options.

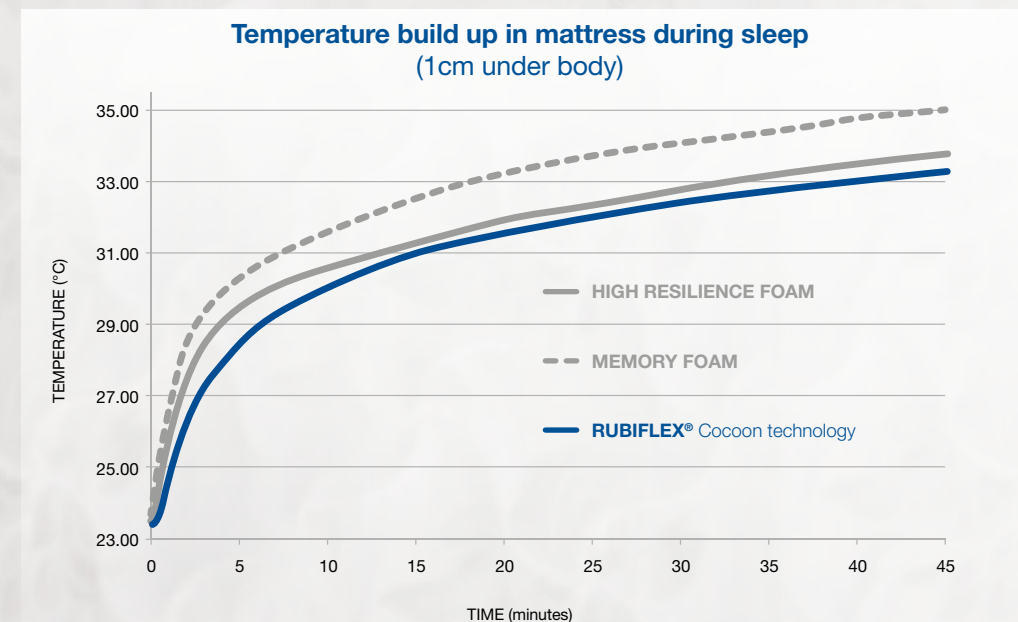
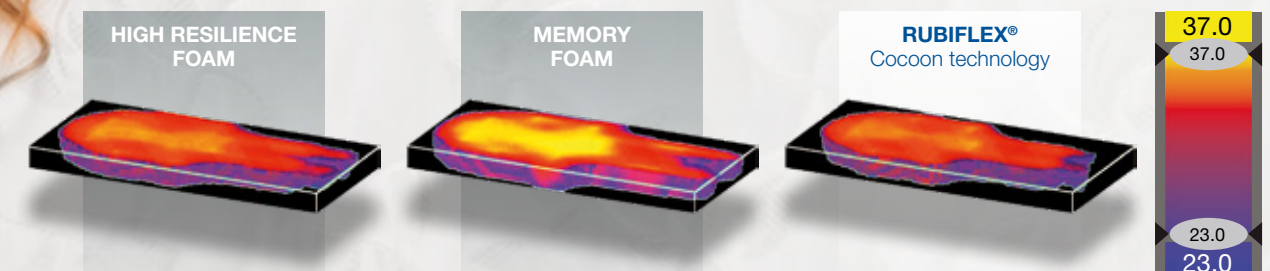
Do you think all of this sounds too good to be true?

**Learn more about the RUBIFLEX® Cocoon flexible foam system
on the following pages.**

HEAT REGULATION

Enabling mattresses to breathe,
means allowing the whole body to breathe.

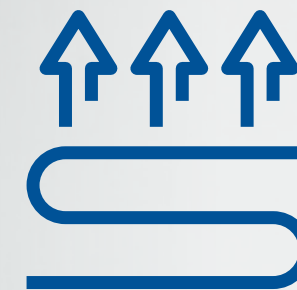
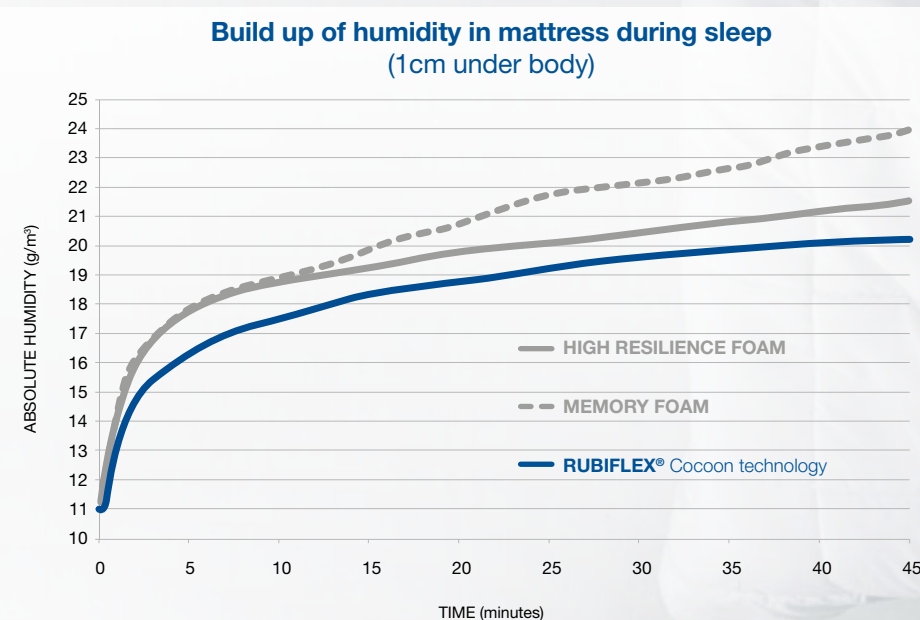
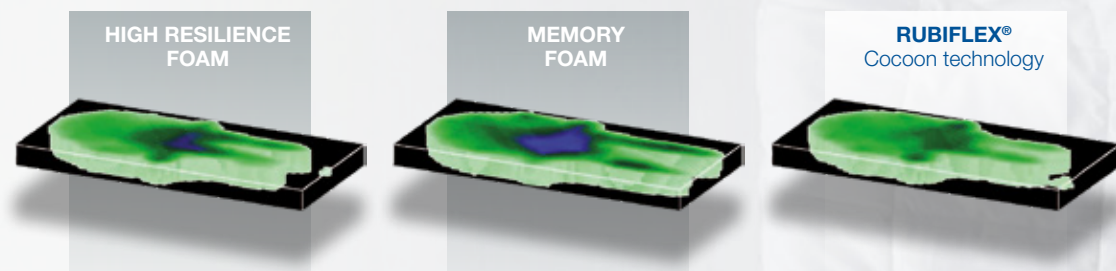
The foam created in RUBIFLEX® Cocoon
flexible foam system has an open cell structure
that creates better breathability and allows
for high and constant airflow. This assists
in transporting heat away from the body's
surface, reducing the build-up of body heat
during sleep, thereby keeping a comfortable
body temperature.





HUMIDITY CONTROL

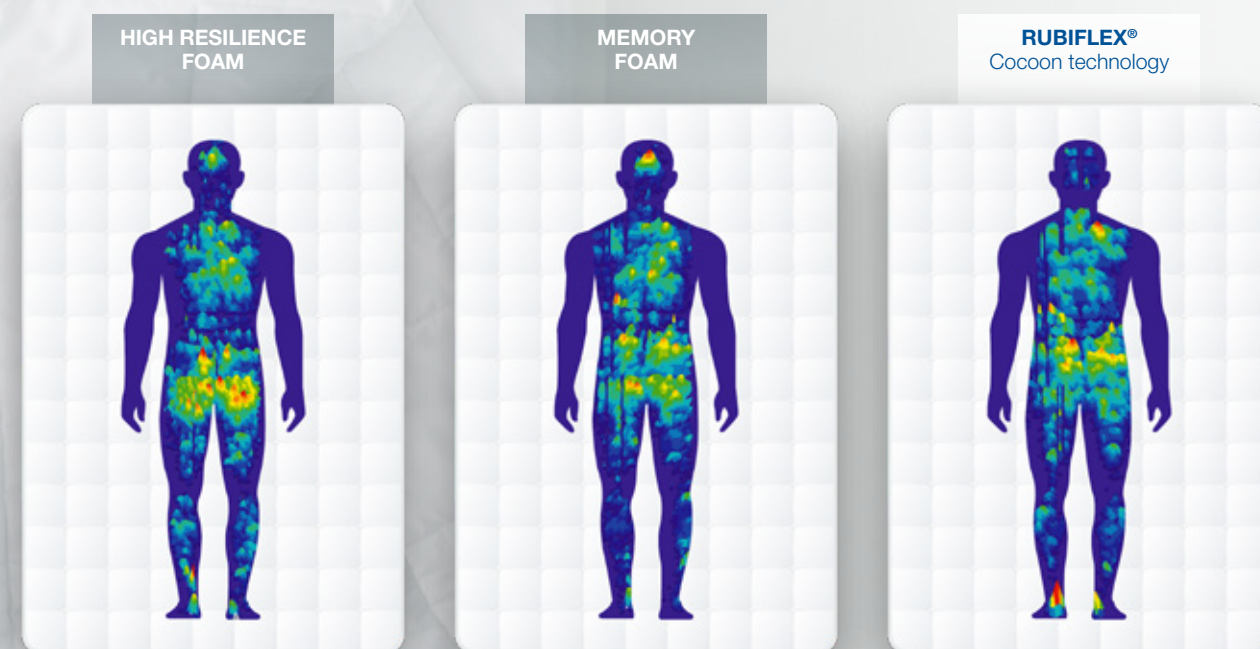
Maximizing the dissipation of moisture means minimizing build-up of humidity near the body. The foam created in RUBIFLEX® Cocoon flexible foam system has a special polymer structure which offers a good balance of hydrophilic and hydrophobic polymer segments, enabling both water vapour permeability and moisture transmission. This way, the natural build-up of humidity generated by the body is dissipated very effectively, enriching the overall quality of sleep.



PRESSURE DISTRIBUTION

Minimizing pressure points means maximizing comfort. This can only be achieved by optimally cradling the body whilst still enabling natural body movement during the night. The technology in RUBIFLEX® Cocoon flexible foam systems makes it possible to manufacture foams that provide precisely this well-balanced level of support and pressure distribution resulting in improved blood circulation, deeper, more restful sleep and general sense of wellbeing.

Maximum balanced support and pressure distribution





All advantages at a glance

- Heat regulation
- Humidity control
- Pressure distribution

And also

- High block yield and consistent foam density and hardness – improve mattress conversion efficiency
- Durable and resilient – retain original feel, thickness and shape
- Very low compression set – enabling vacuum packing
- Low ambient temperature sensitivity – enabling easier conversion
- Very high tear strength – suitable for adjustable bed mattresses
- Meeting low VOC requirements – LGA, CertiPUR, IKEA specifications

Possible application areas

Mattresses – pillows – toppers – armchairs – sofas – car seats

Slabstock & Batchblock typical properties

RUBIFLEX® Cocoon flexible foam system offers a broad range of density and hardness combinations.

SLABSTOCK	UNIT						
Density	(kg/m3)	40	42	44	48	55	56
Hardness ILD 40%	N	76	222	97	192	80	194
Tear strength	N/m	425	257	343	181	242	161
Compression set at 70°C dry and 90% compression	%	2,9	3,0	1,3	2,3	2,4	1,6
Resilience	%	59	48	58	55	62	60
Dynamic Fatigue	ISO3385						
Thickness Loss	%	1,5	1,1	1,2	1,1	0,8	0,8
Hardness Loss	%	17,8	19,7	15,0	14,5	8,0	8,9

BATCHBLOCK	UNIT				
Density	(kg/m3)	42	39	40	47
Hardness ILD 40%	N	83	137	193	137
Tear strength	N/m	231	223	217	190
Compression set at 70°C dry and 90% compression	%	2,6	4,8	2,6	2,3
Dynamic Fatigue	ISO3385				
Thickness Loss	%	1,2	1,8	2,1	1,0
Hardness Loss	%	15,4	27,3	28,6	16,8

* All physical properties measured according to ISO standards.



Striving for sustainability

We are dedicated to the development of sustainable solutions that can support the industry's environmental ambitions.

As signatory to the United Nations Global Compact (UNGC) - the world's largest voluntary corporate citizenship initiative - our work is guided by the UN's 17 Sustainable Development Goals. All 17 UN Sustainable Development Goals are important to our business - with three of particular relevance to our work in the bedding and upholstered furniture sectors.

Improving sleeping comfort, health and well-being

Enabling high **productivity** and formulation **rationalization**

Optimal use of natural resources for high performance durability and transportation efficiency

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RUBIFLEX® Cocoon flexible foam system:**
Contact a Huntsman representative or
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www.huntsman.com/polyurethanes

About Huntsman:

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated and specialty chemicals with 2018 revenues more than \$9 billion. Our chemical products number in the thousands and are sold worldwide to manufacturers serving a broad and diverse range of consumer and industrial end markets. We operate more than 75 manufacturing, R&D and operations facilities in approximately 30 countries and employ approximately 10,000 associates within our four distinct business divisions. For more information about Huntsman, please visit the company's website at www.huntsman.com.

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