In automotive seating and interiors, suppliers are faced with increasingly complex and often conflicting demands. For example, seat makers have to reduce weight, while keeping comfort at the very high levels that car makers, particularly the premium-brand German OEMs, expect, said Eugenio Toccalino, marketing manager for Dow Automotive, based in Schwalbach in Germany. And Toccalino feels the urgency to reduce weight has stepped up a beat now, "driven both from this CO2 regulation proposed for 2012 in Europe, and as well by fuel efficiency." Added impetus here comes from soaring fuel prices, which are hitting consumers, not only in Europe but in North America as well," he said. So there is a strong drive towards lighter weight parts, and since seating systems represent almost 40 percent of the weight of a vehicle's main interior components, "it's clearly a major target," Toccalino said.

For automotive seat maker Lear Corp., based in Southfield, Michigan, "Environment is a big thing, so anything that improves the sustainability or recyclability or safety of the product is of great importance to our customer," commented Ash Galbreath, Lear's director of advanced materials and comfort engineering. Here, renewable soya polyols from Lear also give very low volatile organic compounds (VOCs), "a very important aspect," he added.

It is "seemingly becoming even more important as we go forward to reduce vehicle emissions," and potential exposure to whatever comes out, Galbreath said. Light weight is also a significant demand, he agreed, and must be achieved while, "trying to attain the same level of responsiveness and durability in the foams ... with thinner constructions that's very critical," Galbreath added.

One approach Lear has taken here is the introduction of extremely lightweight expanded polypropylene (EPP) foams combined with PU foam, in seating, as described in the box p27.

In Europe, seat-foam maker Proseat GmbH is also working on EPP for use in the structure of rear seat frames. EPP is, "extremely light, has more open and dynamic and a more sustainable share of value along the complete value chain." Price pressure is at levels never seen before and the volatility and unpredictability has led to an "unprecedented situation," he said.

"For the first time OEMs have been increasing prices of their vehicles ... and saying this is due to the raw material increases," he commented.

Toccalino thinks that in the end consumers will have to pay more for their cars. The fact that oil prices have become so visible to all has made translating this across the value chain easier, he added.

Suppliers such as Dow, and a lot of the Tier 1s, have raised efficiency and productivity and "absorbed a lot of the higher prices in our plants," in recent times, he said.

Another avenue for Dow to keep costs down is its joint venture with partners in the Middle East "to have production where manufacture and availability for raw material is the most competitive."

Toccalino also mentioned the potential of further consolidation. "I would say if suppliers are not able to go for profitable and sustainable business they run the risk of bankruptcy."

This is not in the interest of the OEMs because when they lose a big supplier, they lose key components, so often they have to buy in and take back some component production, Toccalino said. He also reiterated Thienpont's comments about innovation: seating is an area where the OEMs depend on innovation from the Tier 1 and 2 suppliers, he said; if they are not able to innovate because they don’t make enough money, it’s going to be bad for the OEM as well.

Toccalino said, short term "we will see some prices going up, maybe some volume contracting," but investing in innovation will result in better energy efficiency, less use of resources and better products for the consumer, he said. Asked if raw material increases can be passed on to customers in the automotive business, Thienpont commented: "We have had to adopt the very strange habit that they started in North America: threatening up front with cash before deliveries."

And he made the same point as Toccalino about transparency in prices: "It has been easier because everyone knows that prices are going up now."

COSTS ACROSS THE VALUE CHAIN
Tier 1s and OEMs have "major resistance," to paying more for components, said Dr Hamdy Khalil, Woodbridge Corp.'s global director of research and product development. This is the case although, "they know the facts if they make their own foam: they know what they are paying for raw materials and they know that the prices are increasing. But there is major resistance in accepting price increases from Tier 2s like ourselves," Khalil added.

With raw materials, "What is happening really is, because of [high demand in] China and India, they say "this is our price, if you want it take it, if you don't want it, we have other people waiting for it."

Canadian-headquartered Woodbridge has seen raw materials prices rise three time over the last year or so. Khalil and Thienpont both said their raw materials prices had risen by 20 percent during this period (see box p30 for another take on this debate from the Euro-Moulders group of automotive foam makers).

For raw materials supplier Dow, however, the "burning question is the cost-spread across the value chain," according to Toccalino. "We should see a
a certain firmness [and] you can use it for anti-submarine parts,” and it can be used in combination with PU foam to solve structural problems, to make parts stronger at lighter weight, said Raphael Thienpont, president and CEO of Proseat.

EPP can be combined with polyurethane: injection-moulded structural parts can be over-moulded with EPP and then foam, he added. OEMs, specifically Volkswagen, but also BMW, Audi and French car makers, are already using Proseat’s EPP approach, in their rear seats, Thienpont said. “Volvo is also following that route…it is all a question of … creating ideas to reduce the weight,” said Thienpont.

HE FELLS Proseat is able to develop optimal use of EPP and PU, to add more value to the seat makers or the OEMs. Proseat works with EPP manufacturer Storopack on seat uses, and will install equipment to develop the technology, Thienpont said.

“We also developed a foam which we call Compact Foam,” which offers the same comfort at lower thicknesses, compared to conventional foams, Thienpont added. It may be no surprise to industry experts that, when asked about the significant trends in automotive seating, Thienpont chose to focus first on pricing. Technical aspects are important, he agreed. “But what we are confronted with – not only in seating but in everything in the car – is every year or even several times a year, this story about raw materials prices going up,” he said, a topic discussed further in the box left.

“This is a story which is taking so much time, that we are missing out on being creative in new business,” the Proseat boss stressed.

That aside, Thienpont identified two main demands: “comfort, comfort, comfort … and the other thing of course is lower weight due to fuel consumption of the car.”

LEARN ENTHUSIASTIC ABOUT EPP

Lear has reengineered some products to make them thinner “using our DECS process (Dynamic Environmental Comfort Structural System) where we substitute a portion of the polyurethane foam with alternative foam structures such as expanded polypropylene (EPP) foam,” said Galbreath.

Lear was “actually the first to use EPP foam, in the Audi Eco model in Europe, then the first in North America with the GM Impala 2nd row and the Ford 500 bolster,” Galbreath claimed. The group has partnered with EPP suppliers such as JSP International to develop this technology, and it has been used all over the vehicle for crash avoidance, side impact protection, roll-over protection, “It’s a pretty common automotive material,” Galbreath said.

“By doing that, we’re able to eliminate the typical moulded-in frame in the polyurethane structure, or reinforcing wires, or B surface treatment to protect it from the springs or the frame,” said Galbreath, noting out that this is “really a common issue, it’s trying to engineer that and still provide adequate comfort.” Lear calls the EPP a semi-durability layer (see pictures). Remarkably, it has obtained a 15-85 percent weight reduction over conventional foams just using this system, said Galbreath.

Another benefit is the ability to mould-in openings, replacing foam/steel with air and then mould-in attachment points in the EPP, Galbreath added.

Analysis “shows we can get front-row comfort in the second row with this system,” he said.

According to Thienpont, comfort is “mainly related to a soft step-in touch and a good support,” as well as passive or active climate controls.

While most of those interviewed did not feel PU had serious competition in seat cushions, Galbreath saw it differently. “Lear is aggressively looking at use of alternative materials for side areas or trim laminate” he commented.

“Alternative materials are really a big deal,” he continued, citing specifically use of non-woven polyester, to replace some foam. This adds complexity of course, he agreed. “But areas such as console covers, where we laminate the foam, and areas of lessened contact or lower durability risk,” these “really show some promise with alternative materials,” he said.

PET, for example, is 100- percent recyclable, can be sourced as a recyclate also, “and you get zero VOCs so it is cost competitive,” Galbreath said.

Fehrer GmbH feels thermoplastic-fibre techniques do “not reach physical properties, durability and design and concept targets as PU does,” said Dirk-Endres Hein, head of research and development at the Kitzingen, Germany-based seat foam moulder, in written answers to Urethanes Technology International.

At Bayer MaterialScience, flexible foam expert Dr Sven Meyer-Ahrens sees the possibility of alternative materials replacing PU foam – but only “for a little insert here and there. “This might be an opportunity for entry-level cars, but not for series models,” he added.

GREENING THE SEAT SECTOR

As well as its enthusiasm for alternatives to foam, Lear places considerable emphasis on its in-house soya polyols: “Our goal is to convert our entire global product line over to renewable resources as soon as we can,” Galbreath commented.

Lear has provided soya-based foam for the Ford Mustang seats since last summer and is also converting other vehicles, he said.

“We are converting by plant, so that involves multiple customers.” Lear also has joint projects with suppliers, so some of those are staged to change soon, Galbreath added.

With TDI foams, he said, soya polyols can currently be used at about 5 percent in seat pads, and with MDI, Lear can go up to 28 percent. “We are working both internally and with our supplier partners to increase that,” he added.

In sharp contrast, European sources were much less positive about use of natural oil polyols (NOPs)

Proseat’s Thienpont said only a very small level of bio-polyol is being used in seat foam, although he said that in future “when there is a second or third generation in bio-products which are not in competition with food,” they could be worth evaluating.

And Fehrer’s Hein said in Europe NOPs do not seem to be a big priority. If they were fully compatible with specifications and gave cost advantages, that would be different, he added.

Fehrer is prepared to incorporate NOPs into its products, but sees limits to how much can be added without decreasing physical properties and comfort, “especially in the case of high performance seat-pads and back rests.”

Some 5-10 percent of the base-polyol can be replaced, but not with lower cost, Hein added, and pointed out that “the ecological impact of such quite low amounts is questionable. He also queried whether it “makes sense to ship American soya-products to Europe?” Other NOPs available in Europe could be more interesting, but amounts are strongly limited.

Hamdy Khalil
**PANEL RATIONALISES TESTS**

Every month a small, dedicated group of automotive industry experts meets in the US to discuss reducing redundancy in testing of moulded polyurethane seat foam. These representatives from car makers, Tier 1 and 2 suppliers and raw materials makers form an Automotive Industry Panel, instigated by Canadian foamer Woodbridge in 2004, to work on developing best practice for measuring seat-foam performance.

The team (see pic) is intent on harmonising specifications for testing automotive seat foam, to reduce the complexity of these, said Dr Hamdy Khalil, Woodbridge’s global director of research and product development, and chairman of the panel, in a 1 Aug telephone interview.

“Our mission is really to harmonise specifications within the three groups [GM, Chrysler and Ford] in North America,” Khalil said.

Does the panel intend to move on to global specifications? Khalil said, “First let us clean our act in North America.” He has had interest from Europe, Japan and Korea, but for now the focus is on the Big Three, Khalil explained.

“The intent is to eliminate redundancy in testing and to make the tests functional, because most of the specifications lingering in the automotive industry specifically for seating were really established when latex foam and other materials were used for seating, but not what’s being used today,” he said.

When the panel was set up, the industry had a proliferation of tests for the physical properties of foam — for example, 32 ways of measuring hardness. In a paper to be presented at the CPI conference in San Antonio, Texas, in September, the panel says GM, Chrysler and Ford’s specifications for seat foam had “not been updated for many years” and were “a mish mash of in-house, industry and national and international standards.” Often they had little relevance to seat performance, the paper adds.

“So we’ve tried to clean that up — and have moved from 250 tests to ten,” Khalil explained.

**Too many tests unhelpful**
Proliferation of tests is unhelpful to the industry, Khalil agreed. “That’s why we have the three companies sitting around the same table – Chrysler, Ford and General Motors – with no conflict of interest, no interference in marketing or anything,” Khalil continued.

Emissions are a key concern in the automotive sector, and “is something that we are working diligently on,” Khalil said. But at this stage, “we are focusing really on the physical testing … what is the best test for durability, what’s the best test for comfort,” … the kind of functional physical testing that is required for performance assessment, he said.

For Chrysler, the industry panel helped reduce 14 tests to 11 and cut costs from $2225 to $1425, while for GM, 14 tests were cut to ten, and the costs cut from $2745 to $1360.

“If you look at the newly published Chrysler specification, it is these ten specifications. If you look at the global specifications that have been currently drafted by General Motors and being discussed with Opal and the European partners of GM, they have taken the ten as core.”

“And this is really what we are hoping for when it comes to emissions and VOCs,” Khalil continued. The industry panel has reached consensus very quickly on most aspects, Khalil said. “We are very lucky to have the people who can make things happen on the industry panel … we are dealing with the people that can make the decisions,” Khalil stressed.

**Industry Panel Required Tests**

- Flammability (FMVSS302)
- Odour (SAE J1351)
- Fogging (SAE J1756)
- Staining (ASTM D925, A)

**Industry Panel Core Tests**

- Firmness (ASTM D5374) IFD and IRGL
- Hysteresis Loss (ASTM D5374)
- Tear Resistance (ASTM D624, Die C)
- Wet Compression Set (ASTM D5374)
- Foam Fatigue (ASTM D5374)
- Aged CFD Loss (ASTM D5374)

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**Eugenio Toccalino**

Toccalino pointed out that North American OEMs have publicly announced some very aggressive plans to reach double-digit percent of renewable material in platforms, before 2015. Going from zero to 15 or 20 percent renewable content in plastics is a lot, he added.

With PU representing on average 20 percent of the plastic content in a vehicle, it has to contribute, he added.

Dow has a renewable polyol technology “and we target the seating clearly and NVH (noise vibration harshness uses),” for up to 20 percent of the polyol fraction.

Despite the seemingly low take-up of NOPs in seat foam in Europe, Dow has seen clear statements from some OEMs that they are also looking at 20 percent renewable uses in Europe, he added.

Toccalino also pointed out with oil at high prices ($115 a barrel as of 15 Aug — Ed), the argument for NOPs being lower cost is becoming stronger.

At raw material supplier Elastogran, Dr Thomas Bartz, general manager for its European automotive business unit, agreed that while the interest in NOPs in the US market is because of both cost reduction and green marketing, in Europe evidence for cost reduction is not so strong. And he is among those concerned that “using agricultural products for fuel substitution, whether directly or in plastics ... will put food prices up.”

“What I do see is the green marketing more and more, customers looking for bio-based materials,” he said. BASF has a castor-oil based slabstock polyol, and is looking now to develop a similar product for seating, he said, since slabstock polyols are not useful for seating.

“For us, the most important point is also a complete eco-efficiency analysis,” said Bartz. A green product is not necessarily more eco-efficient than a synthetic one, he added.

Natural oils have to be modified, and fertilisers and transport must be considered, “you have to do the work on analysing it,” the Elastogran expert stressed.

**MDI / TDI use**

All contributors agreed that MDI is being more widely used in seat foam.

“The global trend is clear ... towards MDI although it is not like in NVH (noise, vibration harshness) where you have full MDI formulation,” said Dow’s Toccalino. In seat foam, blends of TDI/MDI are widely used: the TDI is needed “for the overall resilience and comfort of the seat,” he added.
Lear also has a tuned coring technology. “We actually core the B surface of the foam, and still get better comfort performance by putting openings in the right location. MDI is very conducive to this kind of application and that also reduces weight and mass,” Galbreath said.

Toccalino said in Europe, MDI formulations are used in the front seats quite widely, while for rear seats a T80 formulation (80 percent TDI) is more common.

“But we see attempts to move this T80 towards more T20 type of blends and more MDI. The Japanese are already mostly in T20 and the US is still mostly in T80,” but is moving more to formulations with higher MDI levels, Toccalino commented.

Meyer-Ahrens of BMS said he sees only a minor re-introduction of MDI/TDI blends “where it makes sense from a technical and economical point of view.” He pointed out that switching formulations is tricky, and requires, “reapproval from final customers.”

Also, “you have to adjust mould tooling and venting, for different reactivity and flow patterns. This is “not something you do overnight.”

At foamer Proseat, Thienpont said the trend to use more MDI is for two reasons: “because we can meet better comfort solutions but also because of the strong increase in prices of TDI material.” He doesn’t see any TDI shortage, at least in Europe. although he said the US may be different.

Khalil of Woodbridge suggested that “the shift from TDI to MDI is [mostly] because of economics, not because of performance. TDI is very short and there is a surplus of MDI around the world and this is causing a shift in the technology both in North America and in Europe, either to go to pure MDI or a blend of MDI and TDI.”

Khalil sees the technology differing from one OEM to another. “Some people don’t really care – here is my specification, I want these seats to be made and cushions and you’re going to do it,” while others are adamant – “We want the proof that you’re using 100 percent MDI.”

Partly, Khalil indicated, this is the result of industry myths. In BMW’s 5 series, the seats had the reputation of being the finest around and the front-seat cushions happened to be made from 100-percent MDI, so everybody wanted to imitate them. Similarly, a few years ago, the Lexus 300 had a viscoelastic topper,
and again everyone wanted to follow suit, Khalil commented.

But, “if you ever sit on a piece of viscoelastic it [the feel] is gone in seconds … it bottoms … very quickly,” he said, while foam “that’s nice and firm and stays, that’s a different story.”

Pressure is on for seat emissions

In seating, premium OEMs want lower emission systems for seating, but also good processing, which is not so easy when some additives are not allowed in low-emission systems, commented Bartz of Elastogran.

In interiors surfaces, the emissions issue has largely been dealt with, but seating is different because processing is both “dependent on chemicals and very cost driven,” Bartz added.

Previously, in seating, the OEMs “tended to live with so-so solutions,” but “now for new systems, the demand is very strong,” he said. Lowering emissions has become a high priority in seat foam, agreed Toccalino. “Cabin air quality is a big topic, mostly at the premium OEMs, the German or Swedish or British or even, very importantly, the Japanese,” he said. Japan’s OEMs have very stringent requirements in terms of emissions, not just on VOCs but also on specific components such as formaldehyde, he added.

Seat foam has always been a big contributor to emissions, Toccalino said, but it was also previously “considered out of scope because of the potential impact it would have on the cost and other aspects like comfort.”

BASF’s Bernd Welzel commented, “Among the OEMs reported to be asking for low-emission seat foam are VW and premium car makers.”

RM COSTS UP 100 % IN 6 YEARS

Euro-Moulders, the European association of automotive polyurethane foamers, started its raw materials cost index last year as a means of offering customers an independent, objective assessment of how foamers’ prices for five basic raw materials were changing.

It did this in the face of “steady demand for rebates,” on supply contracts from the OEMs, who regard it as “absolutely normal to have a rebate of 5 percent a year, said Bernd Welzel, vice president and CEO of seat foam supplier Feherer GmbH.

Welzel pointed out that “the latest BMW demand is for 2 x 10 percent rebates for the coming years,” joking that “five percent is already a good result,” in this context.

Pressure from customers means foamers always have to keep tight control of costs, have detailed breakdowns and an open book policy so Tier 1s and OEMs “can look pretty deeply into your numbers,” said Welzel, at the Europe/Euro-Moulders annual meeting in Seville, Spain, 12-13 June.

Anonymous internet auctions have added to supplier’s anxieties: in such “marvellous systems” suppliers can bid for projects worth say €200 million, he explained.

Foamers raw materials costs have risen dramatically in the last six years: since 2002 foam makers have seen prices for the polyol-isocyanate mix rise by around 100 percent. For a small automotive supplier such as Feherer, its raw materials costs form 20-25 percent of its total costs, he said, while at some Euro-Moulders members this figure rises to 50 percent.

“So how do we deal with this issue,” of small automotive suppliers caught between the two sides: “what can they do?” Welzel asked.

And optimisation is crucial, to use less raw material, for example. “Change or adapt your product portfolio,” as Feherer had done with other parts – not only foam ones, Welzel said.

But an important aspect is to talk about raw material prices, based on real facts and not on the usual purchase/sales dialogue, he added.

Welzel said a really objective price discussion was “the reason to get this index alive.”

The index charts, every quarter, price changes for five raw materials, TDI, MDI, base polyols for TDI and MDI, and polyols.

And the data is supplied anonymously, via a notary, giving total confidentiality. “We only know that the majority of the European automotive foam producers are participating,” said the Feherer boss.

Euro-Moulders is happy with the traffic across the website (www.euro-moulders.org/ci.html), and Welzel said from personal discussions, all his German customers are using it in their day-to-day business.

OEMs including Daimler and BMW, as well as some of the French companies.

Bartz said BASF’s customers are already very good at formulating the polyol side, and BASF has supported this with its recent development of low-emission isocyanates.

At BMS, meanwhile, Meyer-Ahrens said the group’s polymer polyols imported from the US for automotive applications already meet a very high standard, while materials from its new polymer polyols plant being built in Antwerp will be “even better in terms of VOCs.”

Whose foam wins?

Seat and foam making in North America is quite a consolidated business with only a few big players in each segment.

In Europe, the seat and foam business is somewhat more diverse. Nevertheless, in both regions some of the seat producers make some of their own foam seat pads, while some do not, making for a complex business structure.

French seat maker Faurecia, for example, is generally recognised to be a major foamer as well as a seat assembler.

Seat supplier Lear Corp. has itself moved more strongly into foaming in North America. “Why did Lear take this step?” Galbreath said that the move was seen as “an opportunity to add value in PU foams for seating. Comfort is becoming much more important to our customers, as are the environmental opportunities, and comfort improvement through use of vibration control.”

Lear’s extra capability in foaming follows its purchase of the foam-moulding part of Renosol Corp. in North America, said Galbreath. The seating group has also set up foaming operations in China and Mexico.

Previously, “Lear and Renosol had a JV in moulding and systems formulating,” and Lear still has part ownership of the Renosol blended foam-formulations unit, Galbreath said.

Lear also has its own internal foam moulding operation in Poland.

As a result of the changes, in North America, Lear now makes half its seat foam pads: in Europe it only makes 20 percent, while in China, Lear makes all its own seat foam. In contrast, in South America, it buys all its foam. For Lear, the move also allows it to exploit “some unique chemistries. We have our soybean- oil based PU foam … that is available elsewhere, but our foam is unique in that it...
PLASTICS CUT SEAT WEIGHT

The structure is the main place for seat weight to be cut, and here, Dow has had some success with blow-moulded rear seat backs made of thermoplastics, said Toccalino. This is in commercial use in vehicles in Europe and North America, and gives a 30 percent weight reduction.

Front seats are more complex and Dow is looking at composites, including LFI (long-fibre injection) PU here, as well as thermoplastics.

OEMs are now saying clearly, for every new platform, for the first time, that, “new vehicles coming to the market are going to weigh less than their predecessors,” said Toccalino.

Historically, “if you track any vehicle from one generation to the next, the weight always went up.” Now the challenge is to lower weight, with the same if not better comfort, space, electronics and safety, Toccalino said.

While OEMs are dictating the specifications, the big Tier integrators are the ones that need to deliver it, he added.

Toccalino feels that all the big leaps forward in automotive design, engineering, innovation were driven by regulation, and that is what will happen with mandatory CO2 limits. OEMs will not want to risk the cost penalties here, he said.

Woodbridge adapted to this sales drop by focusing more and more on niche models.” Galbreath said. “Other than that, it’s a regional supply issue regarding proximity,” in terms of following customers in China and in Mexico, he added.

“We are working on advanced technology on improving vibration, and line rates and durability,” Galbreath continued, saying the foaming “gives us an opportunity to really focus on advanced engineering on the foam itself, and provide some proprietary advantages for Lear finished products.”

In North America, Woodbridge has suffered as a result of Lear’s move into foam manufacture. Woodbridge’s foam sales dropped 8.5 percent over three years, said Khalil. “At the same time they still remain our largest customer and we still remain their largest supplier.”

Khalil sees Lear’s move partly as a response to the automotive industry’s attempts to control sourcing in foam a little, by talking to foamers and telling seat makers “this is the foam that we are going to use to build our seats. OEMs go to the Tier 1, either Johnson Controls or Faurecia or Lear and say. “This is the foam that you are going to use,” he said.

Woodbridge adapted to this sales drop by using its existing capacity to make other products, “and our expansion [in foam] really is in China, India and Korea and Thailand,” via “joint ventures in which we are the technology partners,” said Khalil. Nevertheless, Khalil feels foamers can make foam “much better, much faster and much cheaper” than non-dedicated foamers. “You really, really need a lot of expertise in order to make foam properly,” he emphasised.

Thienpont stressed that Proseat, as a Tier 2 foam part maker, want to be involved in the design process, and feels the OEMs are more and more interested in doing this, to promote innovative solutions. “We must not be just the supplier to the OEM but we must be the guys that they are talking to from the moment they start talking about foam,” he said.

Foamer Proseat — a joint venture combining Woodbridge and Recticel’s European seat foam units — is keen to get involved in cooperative deals to use existing foaming capacity fully.

It now has two joint ventures in Slovakia and in Poland with seat maker Johnson Controls. Here, Thienpont said, “I think it makes sense not to repeat the mistakes that have been made in Western Europe — everybody putting up capacities and then not able to fill them up. — Thienpont provides low VOC emissions, which is very critical to our customers,” Galbreath said.

“Other than that, it’s a regional supply issue regarding proximity,” in terms of following customers in China and Mexico, he added.

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“Commentators say comfort in the car interior cannot be compromised for the premium OEMs”

Dynamic situation in E Europe

Another factor is, “pretty dynamic growth in manufacturing in eastern Europe of entry level cars,” such as the Dacia Logan, designed to meet emerging demand in these countries. Higher disposable income means people want to buy “nice furniture, a house and also a car.” That is fueling local demand for these kind of entry level cars,” Meyer-Ahrens said.

Such models need basic foam properties and this has a bearing on the raw materials used, he said, adding that foam based on TDI and polymeric polyols is exploited, with significant use of MDI for higher density.

Bartz of Elastogran said that seat makers, and seat foamers have a fair number of sub-suppliers and transplants that do work for them, particularly in eastern Europe. A well-known example here is the Dacia Logan, where a big Romanian foamer, Spumotim, supplied the foam.

Referring to the idea that cost pressures have led to lack of innovation in the automotive seating business, Meyer-Ahrens said, “these newer kids on the block... have been given some smaller jobs... as a kind of test to see if they can meet the technological demands required.”

And the BMS expert feels in Europe the market is not moving towards consolidation. “I think OEMs want to get their hands more again on the technology for seating... to bring innovation into the market by breaking up the old supply chains and routes,” he said.

“They have driven suppliers to it through this severe price pressure,” he added.

Finally, Meyer-Ahrens made the point that, “OEMs are all competing via product differentiation,” so new models still proliferate. This increases the complexity because “you are focussing more and more on niche models.”

As a result, many different seat cushions are needed, which can create a lot of problems for a foamer, he pointed out.