

KHW Kunststoff- und Holzverarbeitungswerk GmbH



Press release

World's First Sand Tobogganing from Geschwenda



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World's First Sand Tobogganing from Geschwenda
KHW Geschwenda targets new markets at the Spielwarenmesse Nuremberg International Toy Fair

Geschwenda (hwo). The global market leader in plastic toboggans is now venturing into the desert in search of all year round tobogganing. Kunststoff- und Holzverarbeitungswerk Geschwenda (KHW) is set to present the first ever sand toboggan prototype at the Spielwarenmesse Nuremberg International Toy Fair (28th Jan to 2nd Feb 2015), and shortly afterwards at the ISPO Munich Sporting Goods Fair (5th to 8th February). "We want to win over the Arab market with this development, and then follow suit in Central Europe with a beach sled if necessary" said CEO Ralf Groteloh. His company to date exports bobs, sleds and sand toys to 34 countries. Speaking of sand toys: The new "Kids Garden" collection with its striking design will also be on show in Nuremberg. The set includes a sandbox, wheelbarrow, rake, shovel, bucket, screen, and more, and is made from wood and plastic or bioplastic.

The product development of leisure and sporting equipment, which has led KHW to expand its sledding range to almost 40 models, has involved the cooperation of scientific partners, such as Ilmenau University of Technology and the Fraunhofer Institute UMSICHT, also based in Oberhausen, and a world-renowned sand athlete from Namibia as a test pilot. The desert sled that is best used lying down has low abrasion high-tech runners, which are specifically designed for sand speeds on steep dunes up to 30 degrees, will be released in 2015. The company can then manufacture its products irrespectively of seasonal and climatic uncertainties, and can thus secure improved year-round utilisation of personnel and equipment.

The Zella-Mehlis ex-athlete Henrik May, a Nordic Combined expert in a sand skiing school in the Namibian desert, and who works as a test pilot for KHW, explained the difference between snow and sand tobogganing: "Snow and sand have a similar physical appearance, but they behave quite differently. Snow can be as hard as desert sand or concrete, or it can flow like powder. The biggest hurdle in sand tobogganing is the frictional forces that slow down and abrade the material. Another aspect is that the sand sled must take the buoyancy problems and different weight distribution into consideration. According to May, sand tobogganing is in line with sandboarding and sand skiing trends. After all, there are more countries on earth with deserts than (reliable) snow. CEO Groteloh, who promoted the new product with a boy in a turban, plans to make tobogganing a year round activity. "The main task of our company is to come up with even more innovative possibilities for sledding as a leisure and sporting activity, whilst maintaining our formative Thuringian tradition." ++

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High-tech desert sled runners from Thuringia Tobogganing fun on sand dunes based on scientific knowledge from

Ilmenau. Kunststoff- und Holzverarbeitungswerk GmbH (KHW) has responded to global warming and an upcoming sports and leisure trend with their new tobogganing sled. Based in Geschwenda/Thuringia, the world leader in plastic toboggans will release the first desert sled this year designed especially for the Arab and overseas markets. The prototype is currently being tested in the Namibian Desert and will receive its world première the end of January at the Nuremberg International Toy Fair.

A key technical challenge in the development of the "WüSchli [*desert sled*]" consists in its application: When the winter sports equipment slides over a thin layer of water between the runners and the snow when used "normally", it leaves an imprint on the sand dune, which although is very small, is extremely hard and contains heterogeneous quartz grains. Sand skiing athletes have helped themselves to date by frequently waxing or polishing their sleds to allow temporary slippage. Sled runners or sliding areas must be abrasion resistant and also have wide circulation or contact surfaces.

Project partners involved in developing the innovations for the sled assisted by BMWi funding granted by the Central Innovation Program for SMEs were the Department of Polymer Technology at the Ilmenau University of Technology and the Oberhausen Fraunhofer Institute UMSICHT, with the latter being responsible for the characterisation of the tribological properties such as friction, sliding, and wear behaviour. Ilmenau scientists who had previously studied the flora and fauna of desert areas via bionic messages for this project, developed low abrasion surface structures with friction-optimised features and created material models for targeted improved friction. The plastic used for the sled body also makes it possible to incorporate binding additives that influence sliding and wear properties. High-strength carbon, glass or aramid fibres make the runners wear resistant. The combination of polymers e.g. with Teflon and silicone oils reduce frictional forces, which serves to increase sliding speeds.

Sleds or toboggans are mostly made from plastic nowadays. They are made by using a technique called injection moulding. Plastic granules are melted and then injected into a closed mould. Innovative design and manufacturing process steps were integrated into the existing production. Depending on the sales figures, other methods can be tested such as a method in which a plastic film is placed into the moulding tool and back-injected with the melted liquid plastic. The result is an integrated product with the desired mechanical properties. A simple two-component injection moulding process to create a strong bond between the base structure and the highly abrasion-resistant material could also be possible. The third design option would be to have a removable runner/sliding system with a snap hook mechanism, which can be replaced quickly with advanced wear and tear.

As the desert sled goes into production in 2015, the medium-sized company will now manufacture its products irrespectively of seasonal and climatic uncertainties, and can thus secure improved year-round utilisation of personnel and equipment. www.khw-geschwenda.de and www.wuestenschlitten.de

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Sand Sports (Background)

Deserts and beaches are great spots for skiing and tobogganing too: Sand sports are on the rise

Climate change, wanderlust, adventure. Winter sports enthusiasts such as the winter athlete Henrik May from Zella-Mehlis prefers to ski and now toboggan in the desert. Unlike other fans of sand sports, May is no tourist. The 39-year-old has been working in a ski school on a sand dune in Namibia since 2004. The world centre for "Dune Skiing", as he calls it, is also based there. The former Nordic Combined athlete has been testing the first sand toboggan "Made in Thuringia".

KHW GmbH, based near Ilmenau, manufactures high-tech sleds with highly abrasion-resistant runners, manufactures almost 40 models and exports to 34 countries as the global market leader in plastic sleds. As a globally sought-after sand sports insider and Guinness record holder at 92km/h on a sand dune, May is well informed: "More countries have deserts than snow; a total of at least 40." It's probably for this reason that people will ski, sandboard and perhaps soon sand toboggan on massive sand dunes in southwest Africa and further afield.

Sand sports in the UAE, Australian deserts, the USA and South America are recommended as well as in Central Asia from Iran to China, which taking climate change into consideration can offer a year-round alternative to the limited window for winter sports in Central Europe. Those who think that they can use traditional winter equipment to achieve the same results on hot desert sand are quite mistaken. This was the experience of the first desert skiers in California who used traditional boards over 90 years ago. The first sandboarding pioneers from the early seventies in the Namibia desert had a lot to do in order to adapt their equipment and clothing to the sand and sun. Desert skiing today however is only the same in terms of materials, i.e. it has special edges and bindings, which also need to be waxed - to name just three special features.

Whoever wants to fly down a dune on a board in a sea of sand, will generally need a slightly different sporting device as those used in Inselsberg, Brocken or Hohem Feldberg, for descents of 200 to 300 metres. Sand toboggans that can be used in the desert are therefore more reminiscent of a skeleton (a type of toboggan that runs on iced tracks) due to their low abrasion high-tech runners, flat lying support and reliance on the runners. Sand sports guru May, whose innovative goal is to turn the world on to cross-country skiing on sand, sand ski tours, and sledding and downhill on sand, mentions other factors that must be considered when sand tobogganing on sliding and skidding surfaces: Toboggan technique, sand type, clothing and equipment. From his own experience, he knows: "It's best to be briefed on the location before sand tobogganing, as sand dunes can often be blocked in; and what's more, sand can sometimes be as hard as concrete. "

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(KHW - company background)

Well on the way to all-weather sledging

At the world's leading producer of plastic toboggans, one in two sledges is for export. They are bought by dealers in 34 different countries. With desert sledges, a hi-tech piece of equipment for hobby and sport purposes, KHW Geschwenda seeks to access new areas of the market: Gulf States, Turkey, Iran, South Africa, Australia, China, Latin America... At the end of the day, as the Namibian sledge tester and cooperation partner Henrik May says, 'there are more countries with deserts than with snow.'

With new areas of the market in mind, Ralf Groteloh, CEO of KHW, sees desert sledging (www.wuestenschlitten.de) as an opportunity to keep pushing the limits of materials and construction. The thinking behind it is this: why not be able to go sledging throughout the year, perhaps in meadows, in the rain or on the beach? In this way, desert sledging can be considered and the next step towards the goal of all-weather sledging, 'made in Thuringia'.

Injection-moulded plastic is the core business of the East German manufacturer, which employs 90 people. For this purpose it has machines with a compressive force of 90 to 1,600 metric tonnes and an injection weight of 10g to 10,070g. The raw materials used are thermoplastics (ABS, PE, PP, POM, PA, PC/ABS, PC/PA, PBT) and thermoplastic elastomers (TPE). A special feature is the injection moulding of multiple components, which is also used for vendor parts in the automobile industry.

At Geschwenda, great emphasis is placed on research/development and design. This is exemplified by the range of sledges, which now includes almost 40 models and the new 'Kids Garden' toy set, which is a combination of organic plastic and wood.

KHW supports competitive athletes and young sporting talent, including Luise Kummer, youth world champion in biathlon and Tatjana Hüfner, world champion and Olympic gold medallist in luge. www.khw-geschwenda.de

KHW GmbH (Geschwenda/Thuringia) in facts and figures:

- 2015 **World premiere of the desert sledges at the International Nuremberg Toy Fair and the International Main Exhibition for Sport Business (ISPO) in Munich**
- 2012 Beginning of the desert sledge project with Ilmenau University and Fraunhofer UMSICHT
- 2008 Expanding the product range in the areas of children, gardens and the outdoors
- 2006 Foundational modernisation of the production capacity, growing to 36,000m² 1998
- World market leader for plastic sledges; design prizes (D, CH, RU)**
- from **Formation of KHW Kunststoff- und Holzverarbeitungswerk GmbH**
- 1990 Millions are invested in injection moulding technology
- The world's first toboggan sledge program with over 30 models**
- 1982 Exportation of leisure articles and winter sports equipment, especially to eastern Europe
- 1976 Notable production of plastic shells for skis, sledges and seating
- 1972 Injection moulding comes into operation for the production of sports equipment and other items
- 1958 First winter sports article (ski), wooden
- 1948 Company founded as a purchase and delivery cooperative

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Attention!
You can find a wide range of images and texts at:
www.wuestenschlitten.de

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