

MARCH 2019



**PU9411 HIGH TEMPERATURE
PREMIUM TPU**



**seal-Link.com
IS NOW LIVE GLOBALLY**



**X-TONE NEW GENERATION
HIGH PERFORMANCE
THERMOPLASTIC**



KASTAŞ Contents

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IMPRINT

ZOOM

Kastas Sealing Technologies
March 2019

Publisher

Responsible under
Turkish Press Law
HAYDAR ATILGAN

Editorial Team

BİRCAN ATILGAN
ARZU BERK
SEZEN UÇUK

Graphic Design

IBA STRATEGIC
COMMUNICATION
CONSULTANCY
Cumhuriyet Bulvarı
No:38 Kat:7/703 Konak- İzmir
Tel-Fax: +90 (232) 482 1310
www.ibailetisim.com

Printing

Metro Matbaacılık Ltd. Şti.
Yahya Kemal Beyatlı Cad.
No: 94 Begos 3. Bölge
35400 Buca, İzmir
Tel: 0232 290 33 11

Management

Kastas Sealing Technologies
Atatürk Plastik OSB 3. Caddde
No: 5 35660 Menemen – İZMİR

Tel: +90 (232) 397 60 00
Fax: +90 (232) 502 25 28
info@kastas.com
www.kastas.com

Type of publication

Magazine, Local, Periodical

Date of publication March 2019



In consideration of our existing global success stories we have achieved so far, we are fully aware that, to sustain that trend, we must retain the way of doing business by investing in technology, digital transformation and capacity development, while strengthening the skills and competencies of our human resources at all levels.

Dear Business Partners,

2018 has been an intensive year, where many projects ran parallel and several important investments successfully implemented. We have managed to sustain our market activities in the domestic market where the economic fluctuations and devaluation of the currency became an important burden on the economy. On the other hand, we enjoyed a strong growth in our business in Europe and Asia markets, triggered both from developing current businesses and new projects that were successfully closed.

SAP implementation was one of the most important projects of 2018 for us, and I am glad to announce that the system successfully went live on January 2019. ERP transition was in our agenda for more than 5 years and we made our choice on SAP S4HANA, latest version of SAP, no.1 ERP globally. For 10 months, an experienced team of 60 people from Kastan and SAP partner company intensively worked on the project through design, development, implementation and test phases. The project team also focused on risk management and emergency plans in order to avoid all potential risks during the Go live period. The new system which integrates all business process of Kastan under one single platform efficiently on a strong and reliable platform went live on January 2019 without any system failures or business interruptions.

Parallel to SAP live, new version of our B2B sales portal also went live successfully. The new portal aimed to provide a comprehensive purchasing experience to our customers with many features. We will keep on investing in our IT infrastructure and business software in 2019. New CRM project has already been started in March and planned to go live in June 2019.

These investments will facilitate our way of doing business and will be an important milestone to maintain the sustainable corporate structure of KASTAŞ. We will be keeping our historical commitments, such as expanding our product range, strengthening our quality infrastructure and developing our R&D capabilities. In 2019, we will focus on the design and manufacturing of innovative sealing elements for our customers. Within this framework, we will continue to analyze business and investment opportunities and will focus on value-added projects.

As I have stated previously, our future strategy is focused on sustaining customer-oriented service approach, quality production, and after sales support, while also empowering R&D and continuing to invest high level of commitment that our customers and collaborators have come to expect of us.

In line with the strategy of shifting to the sustainable corporate management model, we have reorganized and strengthened our organizational structure. Referring to preparations for the shift to the Sustainable Corporate Structure, in November 2018, I delegated my General Manager function which I was occupying for 38 years to Mr. Erdi Ceyhan. Together with other shareholders, I will keep the decisive role in determining board-level objectives, taking new investment decisions and implementing them.

In consideration of our existing global success stories we have achieved so far, we are fully aware that, to sustain that trend, we must retain the way of doing business by investing in technology, digital transformation and capacity development, while strengthening the skills and competencies of our human resources at all levels.

The business environment and manufacturing process change very rapidly due to shifts in customer needs and emergence of new technology, such as IoT, M2M, Industry 4.0, Dark Factory, etc. In order to stay in the race in the global economy, as a manufacturer, we all need to operate and invest in technology, innovation and digitalization. For instance, while millions of diesel vehicles are currently being used, they are increasingly being prohibited from entering the city centers in many countries. It is likely that the production of fossil fuel powered vehicles will cease in 20 years. In such a situation, automotive industry will be subjected to a profound transformation. With regards to this transformation, it is certain that the vehicles and production systems will be faced with radical changes.

As Kastan, we will keep following all global trends and advancements, continue our investments accordingly while focusing on developing innovative sealing technologies and investing in material science that will answer the changing needs of the industry.

Sincerely yours,

Haydar Atılgan
Chairman of the Board

ORGANIZATIONAL RESTRUCTURING AT KASTAS

Kastas announced organizational restructuring to better align its organization with company's long-term growth strategies.

In line with the company's long-term strategies for sustainable growth and organizational development, Kastas appointed Erdi Ceyhan, who has vast experience in sealing industry, as General Manager, as of November 2018.

Erdi Ceyhan, will take over company's management and focus mainly on system development, operational excellence through the whole organization in order to realize sustainable growth of the company. Within the new corporate organizational structure, business operations will be managed by the professional management while the shareholders will retain the decisive role in determining board-level objectives, taking new investment decisions and implementing them.

Moreover, as a part of the organizational restructuring, important changes have been realized in several core departments. Kastas have been working on redesigning business processes and inter-department relations since some time and the with the latest restructuring, the organizational structure is aligned with the needs of daily workflow.

In the new organization, all units related to production planning, logistics, tool production, R&D, domestic and international sales are merged under 3 main departments, which will be managed at director level; Sales, Technology and Supply-Chain. ■

“

AHMET PINARLI
SALES DIRECTOR



Kastas sales units and teams are now merged under Sales department, as domestic sales, international sales, branches and Kastas Europe will act on independent but also aligned targets and strategies. Ahmet Pinarli, who has been executing the Domestic Sales Manager role successfully for more than a decade, has been appointed as Sales Director. With "Sustainable Growth" and "Industry Segmentation" goals, Sales Directorate is now strengthening Kastas' market leadership with its focus on new sectors and maintaining the acceleration that has been achieved over the last 10 years within the international markets.



OZAN DEVLEN
TECHNOLOGY DIRECTOR

As one of the main pillars of Kastas' growth strategy relies on Research and Development, this is not limited to product development and material science but also includes methods engineering, new production technologies, manufacturing automation, project development, tool production and engineering services. Within the new structure all these units will be managed by Ozan Devlen, Director of Technology, who has successfully occupied the R&D manager role since 2010.



EMRE ALPER
SUPPLY CHAIN
DIRECTOR

Production Planning, logistics and warehouse management are merged under Supply Chain department and Emre Alper has been appointed as Supply Chain Director. Main objectives of the new department are operational efficiency and excellence in supply chain operations, while adopting new methods, tools and processes.

CONTINUED INVESTMENT INTO AUTOMATIC VISUAL INSPECTION EQUIPMENT

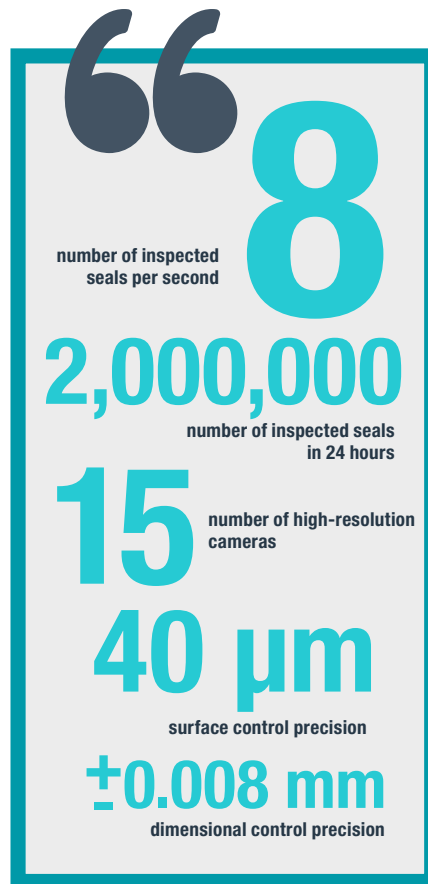
Kastas continues investments in Automatic Visual Inspection Equipment with the target of increasing product quality and efficiency.

Visual inspection is one of the most important processes at Kastaş which have a direct effect on the product quality. Kastaş produces hundreds of millions of seals and gaskets every year. All seals undergo a strict visual inspection in order to detect defects and dimensional non-conformity.

Compared to conventional visual inspection methods, automatic inspection equipments offer higher control efficiency and precision in inspection processes which leads to higher product quality. As Kastas continues investments in automatic visual inspection equipment, investment of the 3rd device is realized in March 2019. With the new device go into service, the control capacity will increase by 40% and exceed 2mio pieces per day.

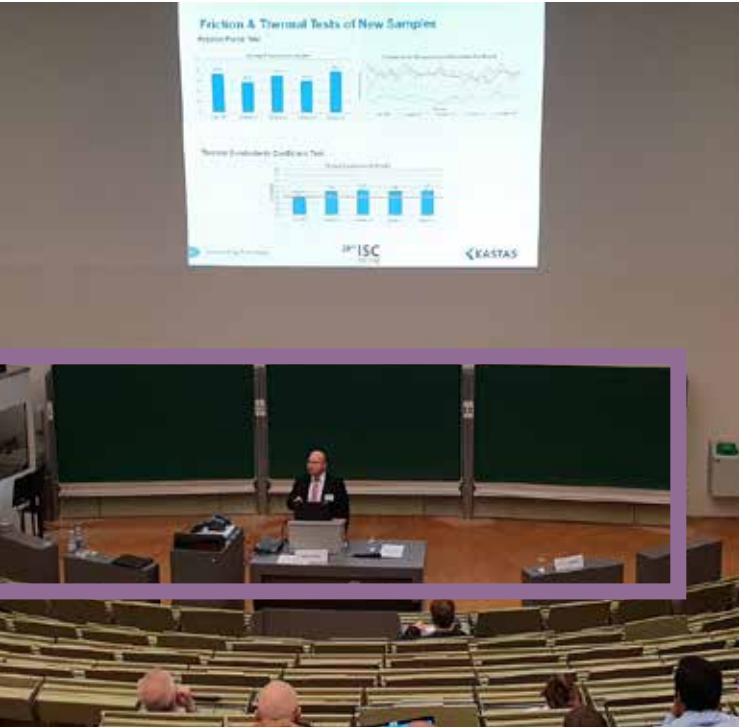
The new device will be the most advanced among all three, with better precision in control of products with a wider range of color, opacity, transparency and profile.

These high-capacity inspection devices can inspect eight seals per second on average, flip the parts to check both sides, and automatically send them into specific boxes,



designated as Approved, Rejected and Rework. With a daily capacity of 700,000 pcs per machine, automatic visual inspection machines work non-stop with high efficiency. Inspection unit in Kastas works 24/7 in order to align its capacity with the production units. Moreover the devices are integrated with ERP as they are able to keep all records for further tracking and traceability. ■





KASTAŞ IS PROUD TO BE REPRESENTING THE INDUSTRY ON INTERNATIONAL PLATFORMS

Kastaş has the rightful privilege of representing Turkey in international civil society organizations and scientific meetings.

Kastaş, having 80% market share in Turkey, is one of the world's five largest producers of Hydraulic and Pneumatic Seals. The technology and competent human resources allow Kastaş to be a pioneer not only in production but also in the representation of our country.

Kastaş represents Turkey in ESA (European Sealing Association) Board of Directors and ISO Fluid Power Committee.

Established in Neu-Ulm, Germany in 1992, ESA has 52 members and represents about 80%

of the European manufacturers of sealing elements. Kastaş joined ESA in 2012 and became a member of Executive Committee of the union in 2015. The ESA Board of Directors, where almost all of the sealing industry is represented, takes decisions about the association and manages the ESA budget. The ESA Annual General Meeting convenes once a year while technical committees meet at least twice a year. ESA core strategy is providing assistance to the members operating in the industry and decision-makers by technically supporting them, making improvement efforts and developing the sealing technologies industry by enabling the companies that are competing with each other to work together.

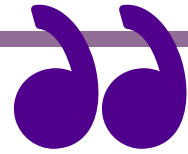
// WE CONTRIBUTE TO STRATEGIES

Kastaş Technology Director Ozan Devlen was reelected as a member of ESA's 5-member Executive Committee unanimously at the 2018 Annual General Meeting held in Italy in May 2018. Devlen noted that our representation on the ESA Executive Committee allows Kastaş and Turkey to be present at the top of the sealing industry.

Devlen further stated that the sealing technologies have a wide range of applications in the manufacturing industry sectors.

// WE ARE IN ISO TECHNICAL COMMITTEE

The ISO Technical Committees (ISO TCs) run the process of writing, voting and renewing all international standards. Kastaş represents the Turkish Standards Institute in the "Fluid Power Systems Technical Committee"—one of the 293 Technical Committees within the body of ISO. Turkish Standards Institute (TSE), which is the competent authority in Turkey, established Fluid Power Systems Mirror Technical Committee in 2012, becoming a P-Member with full voting rights. Thus, Turkey became one of the 14 countries worldwide to guide the future of standards for Fluid Power Industry. ■



OBJECTIVE, HOSTING AN ANNUAL MEETING OF ESA IN TURKEY

Haydar Atilgan, the Chairman of the Board of Kastaş, stated that representation of Turkey in the ISO Fluid Power Systems Technical Committee provides an opportunity to obtain all documents concerning developments in the industry, to participate in international/regional meetings and to contribute to preparation of standards.

Atilgan emphasized that the Technical Committees provide the opportunity to share the technical knowledge, expertise and experience, and to be able to monitor and determine the developments and innovations at European and international level, noting:

"In ISO and ESA, we represent not only our company but also our country on an international platform. In this way, we get an important opportunity to work together in developing and approving new test methods as well as exchange of information in technical projects. We aim to host one of the ESA's Annual General Meetings in the coming years in Turkey as Kastaş."



Haydar Atilgan
Chairman of the Board

KASTAŞ DIRECTOR DEVLEN REPRESENTED AS THE CHAIRMAN OF THE TURKISH DELEGATION IN ISO TC 131 FLUID POWER SYSTEMS TECHNICAL COMMITTEE

The 20th meeting of the ISO TC 131 (Fluid Power Technical Committee for Sealing Devices SC7) was held on 15-16 October 2018 at VDMA headquarters in Frankfurt. Kastaş Technology Director Devlen was the Head of the Turkish Delegation on behalf of TSE at the meetings for SC7 / WG3 SC7 / WG4 and took part in voting for ISO TC131/SC7 working groups and committees. At present, there are 14 full member countries vote in the technical committee. In the studies carried out since 1984, 24 ISO standards have been published, while the development of 4 standards is still in progress.



Ozan Devlen (right)
Technology Director

KASTAŞ R&D TEAM PRESENTED AN ARTICLE AT THE 20th SEALING CONFERENCE

The Kastaş R&D team was at the 20th Sealing Conference (ISC 2018) held in Stuttgart on 10-11 October 2018, which was hosted by Stuttgart University and the German Engineering Federation (VDMA). Technical Paper "High Thermal Conductivity and Low Coefficient of Friction Thermoplastic Polyurethane" was presented by the Kastaş R&D team. ISC is held every two years and is the most respected organization that shares the latest developments and innovations in the sealing technologies. In 2018, ISC hosted 48 presentations in two parallel sessions.

SAP S/4 HANA LAUNCHED

On January 1st 2019, Kastas successfully launched SAP S4HANA, no. 1 ERP software globally.

Advancements in technology and digitalization have led to a significant evolution in corporate workflows, as well as important changes from production to sales and distribution globally. As companies rely more on various software tools to run their business efficiently, Enterprise Resource Planning (ERP) software maintains its position and importance at the center of all corporate functions.

SAP as the most advanced ERP globally is utilized by more than 80% of Fortune 500 companies. In this digital transition era, Kastas management chose to adopt ERP with SAP S4HANA, the latest SAP version and the no. 1 ERP globally, and managed a successful go-live on January 2019.

This extensive project was started at the beginning of 2018 and it integrated all business processes of Kastas under one single platform efficiently. As planned, SAP S4HANA runs all production, sales, distribution, finance, HR, procurement and logistic functions of Kastas on a strong and reliable backbone. ■




HOW WILL SAP S4HANA AFFECT KASTAS?

- ▶ Streamlined processes with automated business operations cross-departmentally
- ▶ More efficient resource planning in terms of HR, machines, equipment, raw materials and energy
- ▶ Integration of various company premises in one platform
- ▶ Advanced reporting, more accurate analysis and effective forecasts due to data creation and management
- ▶ Workflow automation and integration for all business processes
- ▶ Advanced cost management with one source of accurate and real-time information
- ▶ A strong and reliable ERP backbone allowing a full integration with customers and suppliers through EDI, sales portal and CRM

“



seal-Link.com IS NOW LIVE GLOBALLY




B2B sales portal of Kastas Sealing Technologies, seal-Link.com, has recently extended its services to global scale after two successful years of limited service in Kastas Europe, Germany.

The portal, which has been in service since 2017 and is already highly praised by Kastas Europe customers, is now live for Kastas customers from all around the world with new features.

The new version of the portal was successfully launched in January 2019. It is equipped with additional functions aiming to provide a seamless purchasing experience to

customers and 24/7 access to the product range.

seal-Link.com -which used to be a user-friendly sales portal with easy search, advanced filtering and real-time stock status functions- is now equipped with all features expected by our customers. The new version offers a more personalized experience to users, as they are now able to access customer-specific price lists and products, as well as benefit from



unmatched order management and tracking.

seal-Link.com is built on Salesforce(R) platform and is designed according to specific Kastas sales process and customer expectations. Salesforce(R), as the leading Sales Management Software globally, is the strong and reliable backbone of seal-Link.com. It is also fully integrated with SAP, which is vital for uninterrupted real-time bidirectional data integration.

seal-Link.com is now serving customers through the central warehouse in Izmir, Turkey; European logistic center in Quikborn, Germany; and 5 branches in Turkey, with more than 92% stock availability. ■



seal-Link

- ▶ Access to Kastas standard product range of 20,000 unique items
- ▶ Advanced search and filter options
- ▶ Customer-specific products
- ▶ Real-time stock status
- ▶ Flexible logistic options
- ▶ Instant freight cost calculation
- ▶ Quotation generator
- ▶ Real-time order status
- ▶ Order tracking
- ▶ Import order features



KASTAS AT LOCAL AND GLOBAL FAIRS

As a key exhibitor and a global supplier of Sealing Technologies, we have been participating local and global fairs all over the world.

We meet our valued customers and potential customers that we had the opportunity to discuss potential business opportunities and new projects during the fairs we attended in 2018.



MECSPE 2018

Kastas has attended MECSPE 2018 - International Exhibition of Specialized Mechanics - between 22nd and 24th March 2018 in Parma, Italy. Co-exhibiting with our partner STS S.r.l, we had the opportunity to introduce recently launched B2B portal, seal-Link ITALIA along with innovative solutions and recent developments in Sealing Technologies. Moreover; detailed analysis and test results about XT200® eXTrusion Resistant Rod Seal drew considerable interest by the visitors.



KONMAK 2018

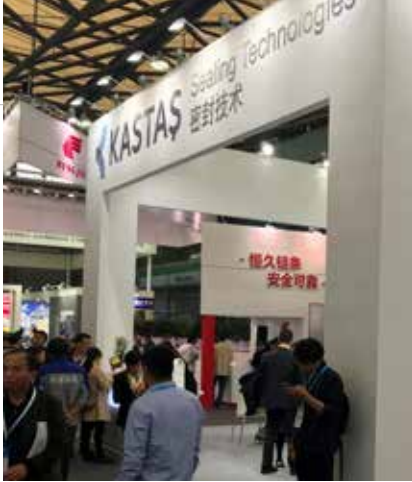
KONMAK 2018 Fair took place at Konya TUYAP between May 10th – 13th 2018 where we had the opportunity to meet local customers and visitors at our booth.

The highlights of the fair were; XT200® eXTrusion Resistant Rod Seal, innovative sealing solutions, Kastás' new materials and latest investments and services in sealing technologies.



CTT 2018 MOSCOW

Between 5th – 8th June 2018 in Moscow, Russia, we participated to CTT 2018, the leading construction event in Russia, the CIS and Eastern Europe offering an extensive range of innovative and technologically advanced construction equipment, machinery and technologies.



PTC ASIA 2018

The leading industrial exhibition for fluid power in Asia, held in Shanghai between November 6th – 9th 2018. As it has always been, PTC Asia was a great event for us to meet our valued customers from Asia-Pacific region as well as meeting new potential customers and users. We are supplying our seals to many well-known manufacturers while enlarging our distribution network to increase our local representation in Asia for more than 15 years. The highlights of this year were K19L and K19X products as well as XT200® eXTrusion Resistant Rod Seal, which was introduced to Asian market in 2017.



WIN ISTANBUL 2018

Kastas attended WIN 2018 in TUYAP, Istanbul between March 12 and 15, with new products and materials and latest investments in sealing industry.

XT200® eXTrusion Resistant Rod Seal, Kastás' recently launched brand new product, drew most of the interest from our visitors. Kastás' new product and materials and ongoing investments at the New Corporate Headquarters and Production Facility Complex have also been introduced at our booth. Other highlights of the fair were **SmartSeal®** and New Generation K17X High Performance Piston Seal.

2019 UPCOMING EVENTS



WIN EURASIA

14-17 March 2019



MECSPE

28-30 March 2019



HANNOVER MESSE

01-05 April 2019



CTT MOSCOW

04-07 June 2019



INTERNATIONAL SYMPOSIUM ON IRON AND STEEL

26-27 September 2019



PTC ASIA

23-26 October 2019



X-TONE

NEW GENERATION
HIGH PERFORMANCE
THERMOPLASTIC

Kastas Sealing Technologies has developed a series of products from a new premium material, X-Tone High Performance Thermoplastic. X-TONE is a Polyketon (PK) material, a premium thermoplastic, with superior mechanical properties that will be the ultimate solution in a wide range of challenging application.

Due to its outstanding mechanical properties and media compatibility, X-TONE can safely be used in a wide range of applications in hydraulics, automotive, aviation, chemical and process industries as well as an engineering component in industry and consumer products. ■



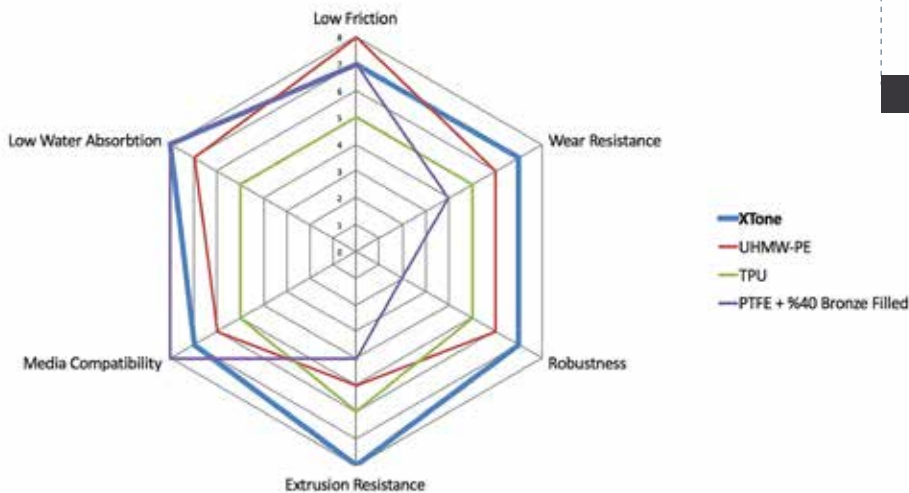
ADVANTAGES:

- ▶ Extreme wear resistance
- ▶ Superior extrusion resistance
- ▶ High temperature resistance
- ▶ Media compatibility
- ▶ Hydrolysis Resistance
- ▶ Low water absorption
- ▶ High resilience
- ▶ Dimensional Stability



Ahmet PINARLI,
SALES DIRECTOR

“X-Tone is developed to be an integral part of our product range with its outstanding mechanical properties. In a wide range of fluid power application, X-TONE products will be a troubleshooter for challenging conditions. Moreover X-TONE products will be a great alternative for non-fluid power applications such as automotive, process and food&beverage industry.”



X-TONE has superior mechanical properties compared to many other thermoplastic materials.



Back-Up rings

X-TONE back-up rings offers higher extrusion resistance compared to other thermoplastics as well as better thermal stability.



Piston Seals

X-TONE piston seals, are generally compact seals with an elastomer energizer and offers outstanding wear and abrasion resistance in rough surfaces as well as better extrusion resistance.



Guide Rings

X-TONE guide rings offers superior guiding performance compared to other thermoplastic guide rings due to its higher load bearing properties and impact resistance.




Wipers

X-TONE wipers are outstanding scrapers that can work on rough surfaces and also very resistance against tear and rupture as a wiper.



Rotary Seals

X-TONE rotary seals offers long service life and stability due to outstanding wear and abrasion resistance of the material.

Fields of application

- ▶ **Mobile Hydraulics**
 - Construction Machinery
 - Hydraulic Breakers
 - Lift Equipment / Material Handling Equipment
 - Cranes
 - Agriculture Equipment
- ▶ **Oil & Gas Industry**
- ▶ **Industrial**
 - Injection Molding Machines
 - Process Industry
- ▶ **Automotive**
 - Fuel Systems
 - AdBlue Compatible
 - Cooling Systems
 - Shock Absorbers
- ▶ **Food and Beverage Industry**
- ▶ **Pharmaceutical Production**
- ▶ **Consumer Products**

Certifications

- KTW / W270 up to 85°C
- ACS 23°C
- NSF 61 to 82°C
- WRAS to 85°C
- EU 10/2011
- FDA





Ozan Devlen
Technology Director



KASTAŞ R&D TEAM CURRENTLY DESIGNS PRODUCTS, MATERIALS AND TECHNOLOGIES OF THE FUTURE SEALING ELEMENTS

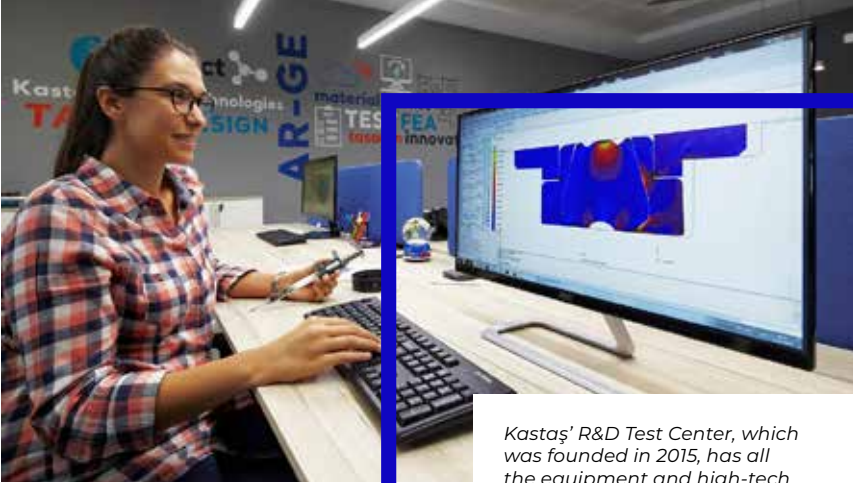
Kastaş combines all its R&D processes under the Technology Directorate and is taking rapid steps towards becoming the leading manufacturer of products and materials in the sealing industry on a global scale.

Kastaş has been attaching great importance to R&D activities since its establishment and presently allocates 3% of its total turnover to its R&D budget, due to which all the processes are gathered under the Technology Directorate.

Kastaş has brought together all production processes and has united all R&D units in a new organization structure under one roof in its new production facilities in Menemen Plastic Specialized Organized Industrial Zone. As this expedites the product, material and technology development processes, materials, products and

technologies that will determine the future of the sealing industry can be developed much faster.

An experienced and highly dynamic team of experts constitutes the Technology Directorate. The team is engaged in intensive work on innovative products, materials, research and tests; they also conduct new projects covering customer expectations, industrial developments and potential investments. All Kastaş branded products are directly used without being subjected to any tests involving customers, thus increasing the responsibilities of the R&D team. The importance given to technological investments by the company increases its competitiveness in the



Kastaş' R&D Test Center, which was founded in 2015, has all the equipment and high-tech devices for testing hydraulic and pneumatic seals at international standards.



A total of 20 engineers, technicians and experts are working at the Technology Directorate, including the R&D and Test Center at Kastaş.



2030s TECHNOLOGY WILL BE PRODUCED

TÜBİTAK PROJECT LASTING 18 MONTHS HAS STARTED

Kastaş and TÜBİTAK have carried out many joint projects so far. In 2019, Kastaş started a new project within the scope of TÜBİTAK Technology and Innovation Support Programs Department (TEYDEB).

Ozan Devlen allocated a budget of 1.2 million TL for the project, as a part of which test equipment, software capabilities, development of new material analysis capabilities, flow analysis and mold technologies will be implemented to the existing R&D capabilities. Devlen indicated that they aim to develop at least two new product families by the end of the 18-month project and gave the following information:

There are hundreds of products in our product family. Our main goal is to increase Kastaş' capabilities in the field of simulation technology. We will test the sealing elements with two test devices, which we will produce and assemble in the test center.

While developing a new product at Kastaş, we move forward with projection towards the future. We have to think about what types of products our customers would need in 2030 and take the necessary steps today.

international arena and strengthens its position as the preferred partner.

According to the Kastaş Technology Director Ozan Devlen, "The company is not only producing sealing elements; it is globally recognized as a technology creator."

Devlen emphasized the importance of the approach of the company management to R&D, which is the basis of success in product, material and technology development, noting that these efforts gained a new impetus with the approval of R&D Center by Ministry of Science, Industry and Technology in February 2018.

Ozan Devlen noted that Kastaş has reached the same level with their global competitors with the implementation of the Fluid Power test and development projects and

added, "These developments are the award of our long-term R&D and design strategies, which are created with the awareness that sustainable growth is only possible through high quality products and innovative production systems that meet the requirements of a dynamically changing environment with special material, design or systems development. It is also an important motivation source for our future R&D projects."

// TECHNOLOGY IN THE TEST CENTER

Fluid power technologies are affected by many factors that are difficult to predict or simulate. Therefore, a combination of test equipment and field tests is the most effective method of product testing based on actual parameters. The R&D Test Center, established by bringing

together the existing test devices in 2015 at Kastaş, has all the facilities and high-tech devices for the testing of hydraulic and pneumatic seals according to international standards.

Kastaş Technology Director Ozan Devlen highlighted that the sealing elements play a very critical role in hydraulic and pneumatic applications.

We need to make sure that the products are working correctly and safely in the specified working conditions. All products we offer to our customers undergo a long and detailed testing process to ensure that they meet both customer expectations and the HSE standards. Our R&D activities are also supported by projects funded by TÜBİTAK (The Scientific and Technological Research Council Of Turkey). ■

K19

HEAVY DUTY PRODUCT LINE

K19 Heavy Duty Piston Seal
K19L Low Temperature Piston Seal
K19X Ultimate Piston Seal



- ▶ **High Extrusion Resistance**
- ▶ **Low Friction**
- ▶ **Low Leakage**
- ▶ **Long Service Life**

The K19 double-acting compact piston seal has a robust design which contains an elastomer energizer, a PTFE ring and two thermoplastic back-up rings. The design has been a preferred design for a wide range of mobile hydraulic applications with low friction, low extrusion and long service-life properties.

K19 Product Line consist of 3 unique material combinations, which were developed to exceed challenging expectations of modern mobile equipment. ■

K19 - Heavy Duty Piston Seal

Standard K19 is an industry standard piston seal preferred in construction machinery application with its high quality bronze filled PTFE ring.

Temperature Range : -30 °C to +105 °C

Pressure : 400 bar

NB8001 Standard NBR

PT6003 High Performance Bronze Filled PTFE

PM9901 Thermoplastic POM Back-up Ring



K19L - Low Temperature Piston Seal

K19L has been developed for the growing needs for wider temperature range and higher extrusion resistance. Its highly preferred in aerial lifts and telehandlers as well as excavators.

Temperature Range : -40°C to +120°C

Pressure : 600 bar

HB8010 Low Temperature NBR

PT6003 High Performance Bronze Filled PTFE

PA9910 High Temperature Resistant PA



K19X - Ultimate Piston Seal

K19X is the ultimate piston seal of the product line that offers unmatched extrusion, friction, abrasion resistance while withstanding temperature peaks up to 150°C and pressure peaks up to 600 bar.

Temperature Range : -40 °C to +150 °C

Pressure : 600 bar

NB8010 Low Temperature HNBR

PT6003 Abrasion Resistant Carbon Fiber Filled Modified PTFE

PA9910 High Temperature Resistant PA



PU9411

HIGH TEMPERATURE PREMIUM TPU



- ▶ High Temperature Resistance
- ▶ Superior Mechanical Strength
- ▶ Very Good Abrasion Resistance
- ▶ High Extrusion Resistance
- ▶ Hydrolysis Resistance

PU9411 is the new generation polyurethane developed by Kastas Sealing Technologies that combines excellent viscoelastic properties and extrusion resistance at high temperature applications.

The new PU9411 polyurethane assures better results and life-time than other materials in the market with its superior properties that have prove itself in long time tests both in-house and also at the field.

The new premium polyurethane PU9411 is developed for challenging applications and extreme operating conditions where high temperature resistance is required.

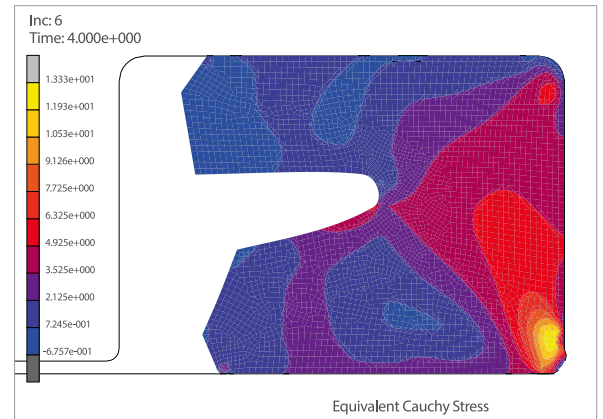
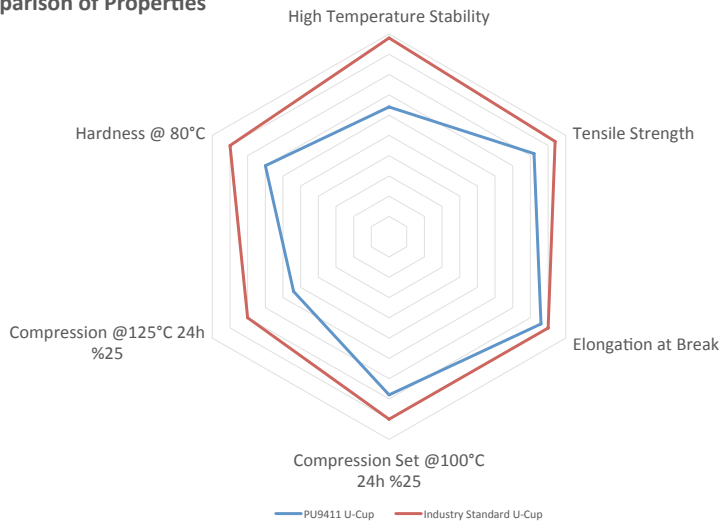
PU9411 can be used in various seal designs, mainly rod seals for mobile equipment and generally all heavy duty applications where extrusion, high temperature, abrasion resistance are required at the same application. PU9411 is the ultimate solution for all cylinders that are exposed to high-temperature painting process.

PU9411 IS AVAILABLE FOR THE FOLLOWING PRODUCTS:

- Rod Seals** : XT200®, FR200®, K31, K33
- Buffer Seal** : K29
- Wipers** : K05, K107



Comparison of Properties



PU9411 polyurethane has superior extrusion resistance even at extreme temperatures.



SmartSeal[®] CUSTOM MADE MACHINED SEALS

New SmartSeal[®] materials

Kastas is enlarging its SmartSeal[®] material portfolio with new TPU and NBR materials.



JPU9405 Polyurethane - MoS2 filled

Operating Temperature: -30°C to +125°C
Color: Dark Red
 Hydrolysis Resistance
 Low Friction
 Abrasion resistance
 High Performance in Dry Applications



JPU9407 High Performance Polyurethane

Operating Temperature: -30°C to +125°C
Color: Red
 High Temperature Resistance
 High Tensile strength
 HFA, HFB, HFC compatible



JPU9408 Chemical Resistant PU

Operating Temperature: -30°C to +115°C
Color: Violet
 Chemically resistant to commonly used CIP fluids
 Low swelling effects in non-polar fluids like mineral oils or fatty foodstuffs
 FDA 21 CFR177,1680



JPU9409 FDA approved NBR

Operating Temperature: -22°C to +100°C
Color: White
 FDA approved material for food&beverage industry
 Static and dynamic usage in bottle filling machines
 FDA 21 CFR 177.2600



JNB8502 High Temperature Resistant PU

Operating Temperature: -30°C to +135°C
Color: Orange
 Excellent physical stability at higher temperatures
 Outstanding thermal ageing resistance

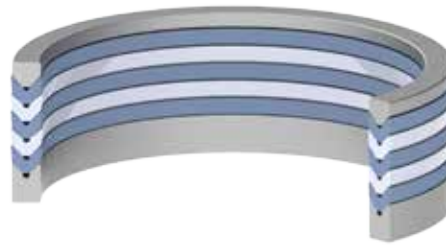
NEW GENERATION HIGH PERFORMANCE UHMW-PE

UP9902 – High Performance UHMW-PE

UP9902 High performance UHMW-PE is a new generation UHMW-PE developed to endure challenging working conditions in heavy duty fluid power applications as well as other various applications.

UP9902 is an ideal solution in many hydraulic applications with its wide temperature range, superior abrasion and extrusion resistance and chemical compatibility.

- **-200C low temperature resistance**
- **High extrusion resistance**
- **Superior abrasion resistance**
- **Chemical compatibility**
- **Hydrolysis Resistance**



UP9902 is developed to use as a main sealing element and wiper in linear and rotary system in fluid power, due to its mechanical properties.

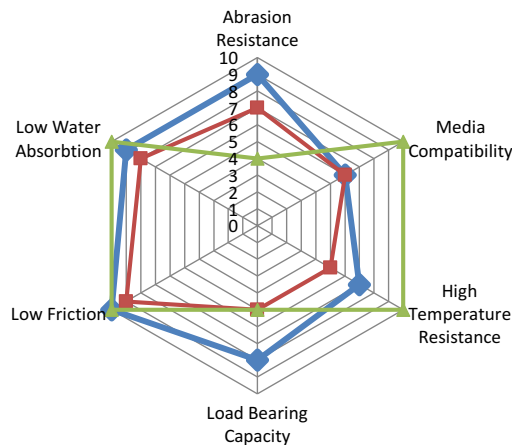


UP9902 can be used as a wiper/scraper due to its abrasion and temperature resistance.

UP9902 is a hydrolysis resistant material and highly preferred in water and water-emulsion. Moreover UP9902 ensures better abrasion resistance compared to PA, POM and PTFE materials.

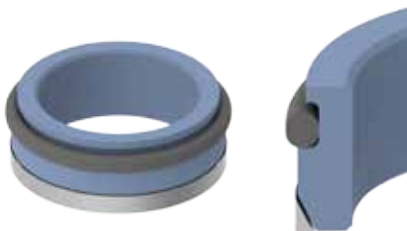
UP9902 is safe for food contact and due to its chemical compatibility, its resistant to a wide range of cleaning agents, atmosphere and UV radiation. ■

Comparison of UP9902 and Other Various Thermoplastic Materials



● New UHMW-PE (UP9902) ● UHMW-PE ● PTFE

UP9902 is an ultimate solution for high pressure Water-jet applications due to its mechanical properties.

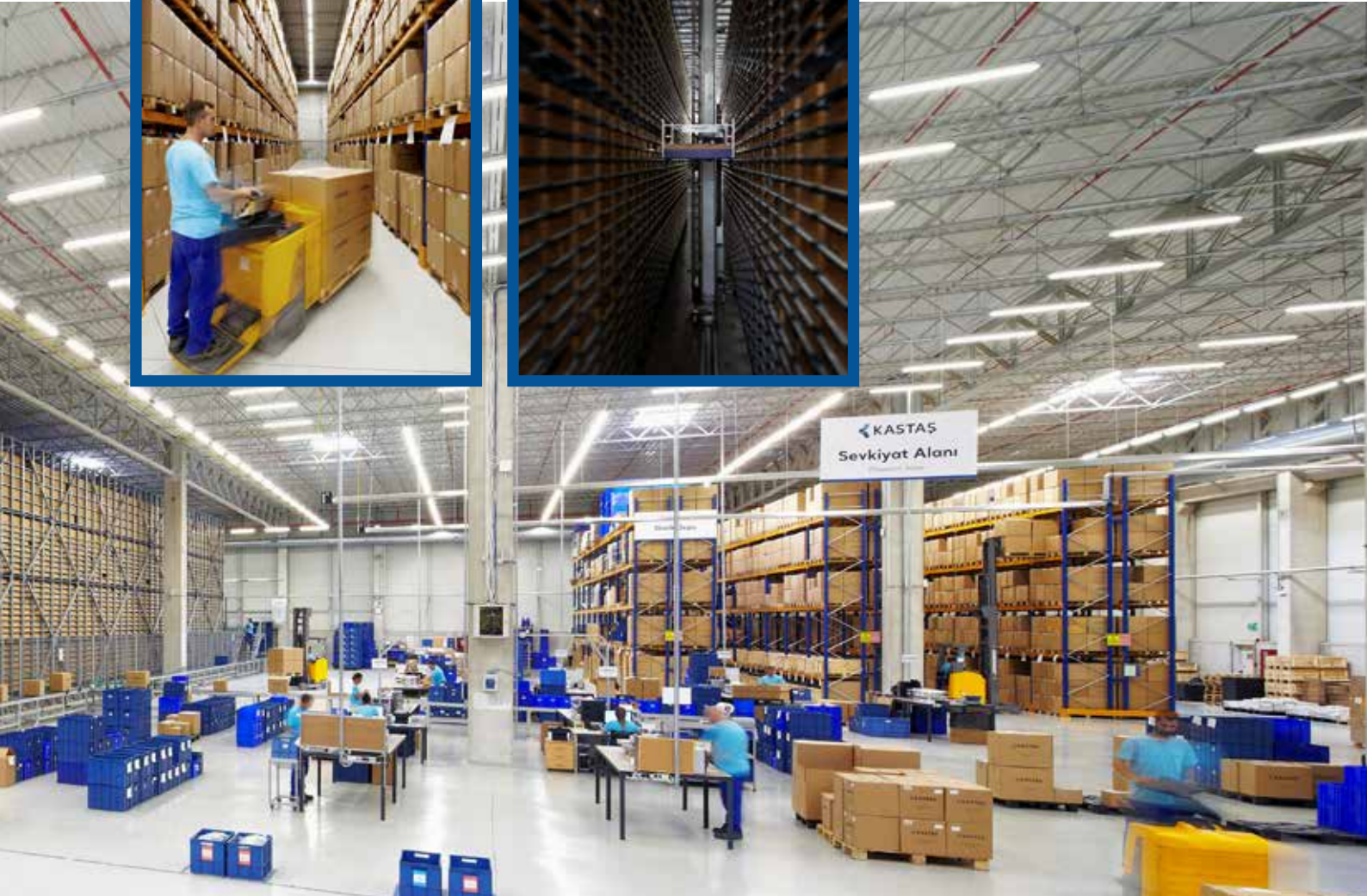


FIELDS OF APPLICATION

- ▶ Agriculture Machinery
- ▶ Food Machinery
- ▶ Construction Machinery
- ▶ Support Cylinders
- ▶ Mobile Hydraulics
- ▶ Forestry Machinery
- ▶ Water Jet Systems
- ▶ Cooling Systems



**KASTAS REVAMPED
SHIPMENT PROCESSES
WITH AUTOMATIC STORAGE
SYSTEM AND NEW SAP WM
MODULE**



Kastas revamped shipment processes with automatic storage system and new SAP WM module.

As product availability and extensive product range have an important role in Kastas' market success and customer satisfaction, Kastas keeps investing in modern warehouse equipment and software.

The 4200 m² warehouse is the main logistic hub from which Kastas supplies products to customers in 81 countries worldwide. The advanced warehouse system has allowed us to increase customer satisfaction by offering an extensive stock comprising of more than 30,000 different items, which assures our customers that we can meet their needs with very short delivery times. The warehouse is

located and designed not only to facilitate efficient operations but is also equipped with the best in class storage systems and equipment, thus fully innovating and streamlining our logistics operations.

Automated storage system covers a 700 m² area and maintains the highest productivity through automatic storage and distribution centers with warehouse management software, material flow software, and storage and retrieval machines, which are distributed to the dispatch stations on a conveyor belt system. At all phases of the warehouse operations, advanced barcode and RFID systems are used to track and process products in order to minimize risks and increase system efficiency. Kastas warehouse is equipped with modern automated storage system which consists of 4 shelf rows, 2 aisles with two robots,

7,040 storage trays, where 30,000 product varieties and more than 60 million product components are stored. Moreover, static shelves are used to accommodate large batch of items and big size products.

By the end of 2018, Kastas warehouse management is switched to SAP WM module, with full integration between built-in software and SAP. Together with WM implementation, product tracking, storing, labelling and capacity planning processes are revamped.

- › Extensive stock for all standard items
- › Wide range of customized products and vast experience in various applications
- › 92% stock availability
- › 2,000 order lines collected per day
- › 75 shipments per day ■



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Easy search



Real-time stock check

Shipment address flexibility



Quotation tool

Import order tool



Realtime order status

Instant transportation cost calculation



Tracking number

