

DUPLEX WORLD SEMINAR & SUMMIT

1 & 2 November 2022
RDM Rotterdam, the Netherlands

STAINLESS STEEL^{WORLD}
DUPLEX
Seminar & Summit

2022



ADVANCE SEMINAR PROGRAM

SEMINAR — EXHIBITION — NETWORKING

Join the leading knowledge, networking and business event for the global duplex community

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Take part in the Duplex World Seminar & Summit 1 & 2 November 2022!

Duplex World Seminar Summit 2022 will be held on 1 & 2 November 2022 in the coastal city of Rotterdam, an industrial hub for the oil & gas, (petro)chemical, energy transition, and offshore industries. Renowned as a targeted and technical event, Duplex World is an international platform for materials and corrosion professionals specialising in the development and use of duplex stainless steel in a wide variety of industries. The event promotes the exchange of knowledge and experience of materials, applications and innovations with a clear goal to optimize the application of duplexes in terms of safety, performance, reliability and cost within the global market.

A word from our Chairman...

"It is with great pleasure that I look forward to welcoming you to the 2022 Duplex World Seminar in Rotterdam, even more so as we return to an in-person format when we will enjoy the real benefits of this hugely successful event. Whilst much may have changed in the world since our last event, the need for a better understanding of the wide-ranging uses of duplex stainless steels remains, as does the manufacturing and in-service challenges often faced with this wonderful but often complex engineering material. Like all previous years, I'm confident that the committee is putting together an exciting and engaging program over the two days that will ensure participants find attendance worthwhile. New uses in emerging sectors such as renewable energies are sure to attract attention. Whether you're an experienced professional or an engineer setting out on a career, I encourage you to attend and take the opportunity to share knowledge, discuss with industry experts and further our collective knowledge of duplex stainless steels.



Bruce Cowe,
Manager
Offshore and
New Energies
Corrosion
Team,
TotalEnergies

DUPLUX WORLD INTERNATIONAL STEERING COMMITTEE

Preparing an international seminar of the highest possible quality is possible due to the help of our international Steering Committee. This group of dedicated individuals have devoted their time and expertise to making the event a success.

- Chairman: Bruce Cowe, *TotalEnergies*
- Jacko Aerts, *DSM*
- Mark van den Broek, *Fluor*
- Tim Collins, *ISSF*
- Raymond Cordewener, *R Cordewener Management & Consultancy BV*
- Dr Dirk Engelberg, *University of Manchester*
- Barinder Ghai, *Sandvik Materials Technology*
- Joelle Greenwood, *Mannesmann Stainless Tubes*
- Dr. Willem Maarten van Haaften, *Shell Global Solutions International*
- John Houben, *Exxon Mobil Research and Engineering*
- Dr Thomas Ladwein, *Steinbeis Transferzentrum Korrosion und Werkstoff*
- Alejandra Lopez, *Tubacex*
- Jan Links, *Dow Benelux*
- Anna Negri, *BUTTING*
- Dr. Arijit Podder, *Jindal Stainless Hisar Limited*
- Rodney Rice, *Langley Alloys*
- Iris Rommerskirchen, *Eisenbau Krämer*
- Janardhan Saithala, *Petroleum Development Oman (PDO)*
- Kasra Sotoudeh, *Manager, TWI*
- Rob Spelt, *Spelt Engineering & Contracting b.v.*
- Yuhei Suzuki, *Nippon Steel Corp*
- Dr Lena Wegrelius, *Outokumpu Stainless AB - R & D*

Join the conversation!

Duplex World combines a technical seminar, exhibition and business with fun and networking at the RDM in Rotterdam, The Netherlands.

All aboard! Duplex World networking dinner

As the former flagship of the Holland-America Line, SS Rotterdam has sailed the seven seas. Discover La Grande Dame's many stories and visit its authentic areas as you eat, drink and sleep. The SS Rotterdam is permanently moored in Rotterdam and it's easy to reach (<https://ssrotterdam.com/>).



After a long and busy day, you are welcome to join the Duplex World Networking Dinner, held on board the SS Rotterdam. The formal dinner is an opportunity to meet and discuss business and further develop your industry connections over delicious food and drink. Live music will accompany the evening, creating a relaxed atmosphere. Don't miss the chance to mingle and initiate your new business plans and ideas!

Tickets are available for €85 from
<https://stainless-steel-world-duplex.com>

Outstanding networking

Duplex World is an interactive event where suppliers, manufacturers, end-users and researchers meet to discuss practical experiences, innovations and new applications. With the seminar rooms located on the exhibition floor, delegates, exhibitors and visitors are free to meet and mingle. Don't forget: your ticket also gives you access to the co-located Heat Exchanger World Conference and Exhibition, conveniently hosted in the same exhibition hall.



TECHNICAL & FOCUSED

The Seminar program is tailored to meet the needs of today's materials users, suppliers, manufacturers and researchers.

Topics include:

- Standards & QA/QC
- Lessons learned in practice
- Renewable energies
- Casting & forging
- Welding & additive manufacturing
- Corrosion
- Metallurgy
- Focus on lean duplex
- New applications
- Ferrite

Ask Dr Duplex!

The popular Ask Doctor Duplex sessions are unique opportunities to solve your materials-related problems. Our renowned materials experts include some of the world's foremost authorities on duplex stainless steel. They are ready to answer your questions in open-to-all sessions on the exhibition floor on both days of the event. From welding to heat treatment, from corrosion to surface properties... whatever application you're working with, the Duplex Doctors have the answers.



Tuesday 1 November 2022

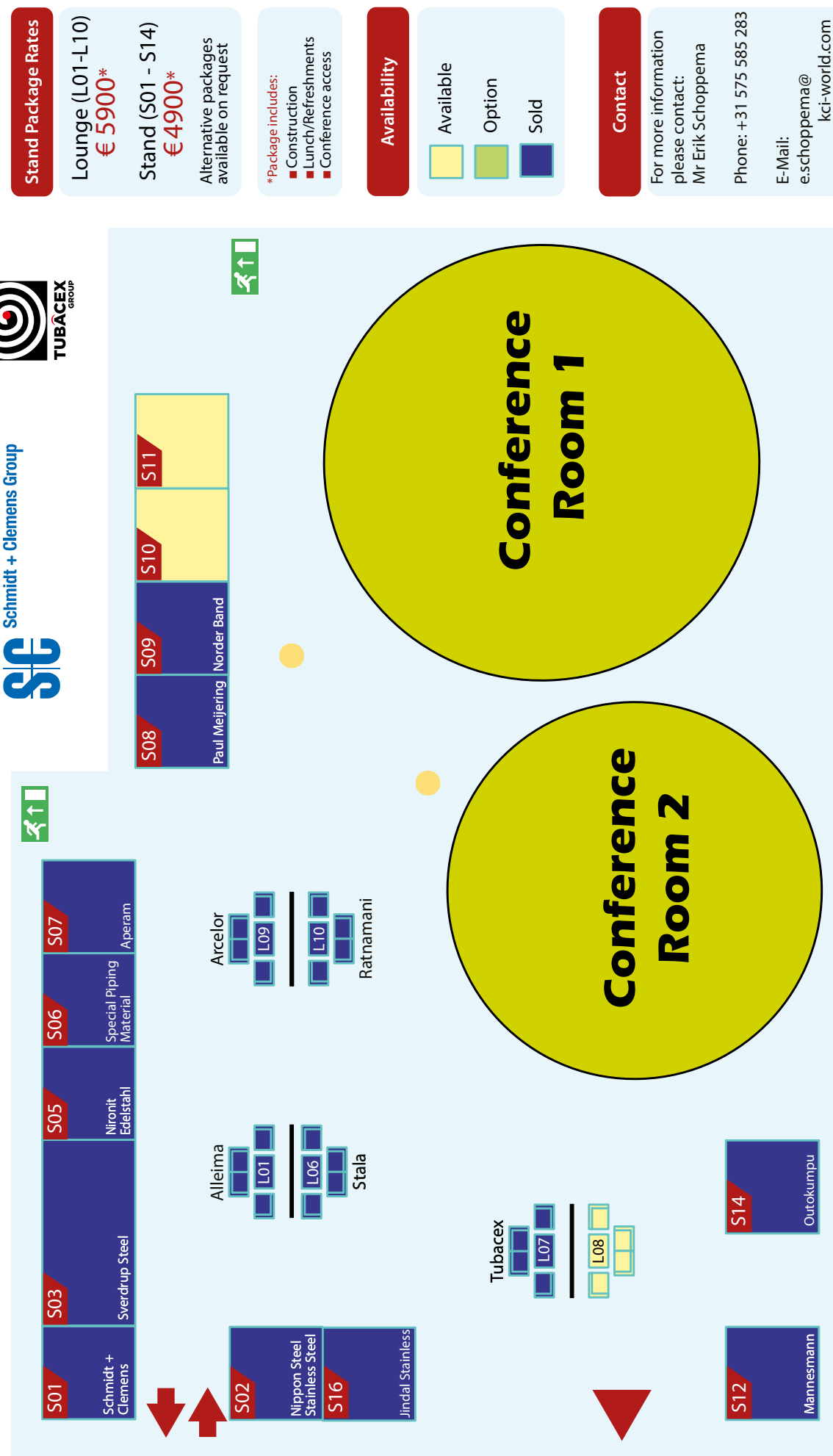
8:30	Visit the exhibition floor	
9:30	Welcome by Duplex World Chairman Mr Bruce Cowe, Manager Offshore and New Energies Corrosion Team, TotalEnergies	
9:45	Keynote: The success of duplex in chemical tanker ships Johnny Eliasson, Shipyard, Projects, & Alterations Superintendent, Chevron Shipping Company LLC	
10:15	Future opportunities for duplex stainless steel: infrastructure, mitigating the effects of climate change, and coastal/tsunami defences. Tim Collins, Secretary-General, worldstainless	
10:45	Coffee & networking on the exhibition floor DOME 1	DOME 2
11:30 – 13:00	OPPORTUNITIES & CHALLENGES FOR DUPLEX IN RENEWABLE ENERGY This session will focus on the role of duplex stainless steel in renewable energy and the opportunities and challenges involved with it. Moderator: Marie Louise Falkland, Outokumpu Duplex opportunity in heat exchangers for alkaline electrolyzers - green H ₂ production. Jonas Höwing, Alleima Duplex in marine structures for new energy - opportunities and challenges. Lena Wegrelius & Mia Liimatainen, Outokumpu Material selection is critical to finding the best solutions from economical & environmental perspectives. Markus Pirkkalainen & Lari Brask, Stalutube Oy	WELDING & ADDITIVE MANUFACTURING Duplexes play an essential role in many industrial sectors, enabling the fabrication of a wide range of parts and components through conventional welding methods and additive manufacturing (AM). However, these processes can affect mechanical and corrosion performance if the materials and processes are not well understood. This session shares state-of-the-art knowledge of successes and challenges with such fabrication processes. Moderator: Kasra Sotoudeh, TWI On the characterization of the heat-affected zone in duplex stainless steel welds. Balázs Varbai, Budapest University of Technology and Economics Enhanced study of 25% Cr Super Duplex welds' properties applying different welding approaches. Lars Schemmann, Salzgitter Mannesmann Forschung GmbH Effect of Nickel and Cobalt addition in duplex steel welded with pulsed Nd:YAG laser. Alessio Settini, University of Padova. Complex geometry in duplex steel components. Peter Kjeldsteen, Sintex
13:00	Lunch break 13:00 – 14:00	
14:00-15:30	CORROSION This session looks at how to tackle corrosion issues in a range of applications by utilising duplex stainless steel. Moderator: Thomas Ladwein, Consultant Duplex stainless steels and chloride SCC – how resistant are they? Roger Francis, Nickel Institute Consultant Evaluation of U-bend and integral finned duplex and super duplex stainless steel heat exchanger tubes' resistance to pitting, chloride and sulfide stress corrosion cracking in refinery services. Bernardo Siza Vieira, Alleima Microstructure evolution and corrosion resistance of Uremium29 special products in urea environment. Beatriz Calleja, Tubacex Innovación, SL	MANUFACTURING INCLUDING CASTING & FORGING This session will focus on mechanical and corrosion properties of duplex castings and forgings with influence on microstructure. Moderator: Barinder Ghai, Alleima Influence of hot work reduction ratio on microstructure and mechanical properties in SAF 2507® material. Munir Al-Saadi, Alleima The Development of ZERON 100 AFP. The development of a manufacturing route to produce API forged flanges with excellent impact toughness at minus 70C. Geoff Warburton, GW Consulting & Rolled Alloys Influence of thermomechanical processing on mechanical properties and corrosion resistance of super duplex stainless steel UNS S32750. Clara Herrera, Deutsche Edelstahlwerke Specialty Steel
15:30	Coffee break	
16:00 – 17:30	ASSURING IN-SERVICE RELIABILITY: ENHANCED TESTS AND STANDARDS FOR QA/QC Standardisation has reached a good level of maturity which enables further consolidation and selection of efficient tests for manufacturing qualification and QA/QC. Moderator: Joelle Greenwood, Mannesmann Stainless Tubes Direct comparison of ferric chloride test methods to detect sub-optimal duplex stainless steel microstructures. Hervé Marchebois, TotalEnergies Corrosion testing of duplex stainless steels – a novel test method to assess and rank susceptibility to localised corrosion at ambient temperature. Dirk Engelberg, University of Manchester History and recent development of standards – NORSOK M-630/M-650 and ISO 17781/17782/17703. Hans Martin Jähren, Equinor	LESSONS LEARNED – AN INTERACTIVE DISCUSSION Moderator: Dr Willem Maarten van Haaften, Shell Global Solutions International Join this interactive discussion about the lessons learned from the successful application of duplexes in the oil and gas industry. Pose your questions and share your experiences with the hosts. - Failure cases of super duplex stainless steel pump components. Janardhan Saithala, Petroleum Development Oman - Implementing the widespread use of duplex stainless steels on major offshore projects – an Operators approach and lessons learnt. Bruce Cowe, TotalEnergies Followed by discussion and Q&A with the audience.
18:00	Buses leave for the networking dinner on board the SS Rotterdam	

Wednesday 2 November 2022

08:30	Visit the exhibition floor DOME 1	DOME 2
9:30 – 11:00	METALLURGY OF DUPLEX STAINLESS STEEL This session focuses on changes in the microstructure and properties of duplex stainless steels when exposed to higher temperatures, during short terms exposures, or fabrication. Moderator: John Houben, ExxonMobil Using kinetics to avoid sigma phase formation in hyper duplex stainless steel. Andres Acuna, Ohio State University Effect of short-term exposure (100 - 1000 hours) of duplex stainless steel to the temperature range of 300 - 400°C. Dr Arijit Poddar, Jindal Stainless R&D Ferrite measurements using different methods. Briony Holmes, TWI	LEAN DUPLEX – USE AND PROPERTIES In this session on LDSS different views on application and the influence of surface condition on corrosion resistance will be discussed. Moderator: Jan Links, The Dow Chemical Company Pitting corrosion initiation of UNS S32202 welds. Pauline Huguenin & Veronica Scheiber, Aperam Stainless Europe The benefits of the physical properties of lean duplex in improving building thermal insulation. Florent Krajcarz, Aperam Stainless Europe Umbilical applications: material selection and adoption of duplex into the umbilical tube family. Dr Xiaoxue An, Technip FMC Umbilicals
11:00	Coffee break	
11:30 – 13:00	NEW APPLICATIONS This session addresses challenges and new opportunities for the application of duplexes, focusing on providing a better understanding of service performance and associated limitations. Moderator: Dirk Engelberg, University of Manchester Duplex application for underwater renewable energy project – a case study. Josh Sheedy, Arcus Wire Group The advantages of using 2507 super duplex wire as slickline with test laboratory data; advantages and service experience. Geoff Warburton, GW Consulting/Wilco Oilfield Services Innovations in the application of duplex screws, bolts and fittings. Nimeka de Silva, Bumax	WELDING – AN INTERACTIVE WORKSHOP Hosted by Loic Armadu, Friedlander ORTEC Group. This session combines short videos, slides and Q&A in an interactive mix that encourages audience participation. Because welding is a new heat treatment to the base material/ welding layer below, it can have an influence on the microstructure, phases, ferrite content, mechanical values, hardness and corrosion of the steel. The hosts will also present information on preheating to avoid a high ferrite content in the first layer/path; and the correct conditions for additively manufacturing and welding duplex.
13:00	Lunch 13:00 – 14:30	
14:30	A NEW ERA FOR DUPLEX; PROMOTING & EXPANDING ITS USE GLOBALLY Thought-provoking presentations consider important aspects critical to increasing the practical application of duplexes; CCS, lifecycle costs and maximum operating temperatures. Moderator: Dr Willem Maarten Haaften, Shell Global Solutions International The application of duplex stainless steel in Carbon Capture and Storage (CCS) wells. Dr Willem Maarten Haaften Shell Global Solutions International Application-aligned lifetime sustainability model: comparing the suitability of duplex compared to other materials over a 100 year lifecycle. Tim Collins, world stainless	DOCTOR DUPLEX - OPEN TO ALL All visitors, delegates and exhibitors are invited to pose questions to the duplex experts in this unique opportunity to solve your materials-related problems. Doctors in session include: Lena Wegrelius, Outokumpu Dr Dirk Engelberg, University of Manchester Iris Rommerskirchen, Eisenbau Krämer Jan Links, The Dow Chemical Company

Timetable subject to change: please check the event website for updates.





General Info

Targeted Exhibition

The Duplex World exhibition is the ideal platform to highlight your company's products and services. The unique focus on duplex means almost every visitor is a potential client! With a strong focus on personal interaction, the exhibition brings together manufacturers, suppliers, end-users and researchers to discuss practical experiences, innovations and applications. There are two exhibiting possibilities:

Exhibition Stands

provide the ideal platform to showcase your company's products, services and activities and facilitate direct B2B activity. Benefit from the attention of the engineers, procurement managers, and decision-makers present. Stands measure 9m² and are supplied as a complete package, including:

- Stand construction
- Full-colour graphic walls (inside walls only)
- Carpet
- Counter, table & chairs, magazine rack
- Two days catering for two staff members
- Seminar tickets to all workshops and conference sessions for two staff members
- Package price of the 9 m² stand: € 4,900,-



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Networking Lounges

provide an opportunity for companies to network directly with clients and peers in an informal setting which is ideal for discussions. Lounges are supplied as a complete package, including:

- Full Color Vertical Display Panel (double sided)
- Carpet
- 2 Seater lounge
- 2 Armchairs, coffee table, magazine rack
- Two days catering for two staff members
- Seminar tickets to all workshops and conference sessions for two staff members
- Package price of the Lounge: €5,900,-



www.stainless-steel-world-duplex.com

To book your stand or networking lounge, click on the bit.ly links above, visit www.stainless-steel-world-duplex.com or contact Mr Erik Schoppema, tel: +31-575-585-293, email: e.schoppema@kci-world.com

Visit the website to view the full floorplan and exhibitor list: www.stainless-steel-world-duplex.com

Great synergy: Heat Exchanger World Europe



One ticket
=
two events!

Heat Exchanger World conference and exhibition take place at the same time and location as Duplex World. Tickets to either event allow access to both!

Take advantage of the great synergy between the heat transfer and duplex communities. The Heat Exchanger World conference will showcase some of the latest developments within the industry as well as providing interesting discussions on current challenges to the supply chain.

The exhibition features many leading heat transfer specialists and will be a meeting ground for those working in every field of the heat transfer supply chain.

With the seminar rooms located on the exhibition floor, delegates, exhibitors and visitors are free to meet and mingle between both events.

To view the conference program and exhibitor list, please visit:
bit.ly/3MN8MgC



Seminar & exhibition registration

Conference Tickets

2 Days Seminar Registration <ul style="list-style-type: none"> - Two days of participation in all sessions and workshops - All Seminar proceedings online (passwords protected) after the event - Two days of unlimited access to the Duplex World Exhibition - Two days of unlimited access to the Heat Exchange World Europe Exhibition - 2 days lunch and refreshments 	€549
1 Day Seminar Registration <ul style="list-style-type: none"> - One day participation in all conference sessions and workshops (choose either 1 or 2 November) - All conference proceedings online (password protected) after the event - One day unlimited access to the Duplex World Exhibition - One day unlimited access to the Heat Exchanger World Europe Exhibition - 1 day lunch and refreshments 	€349



www.stainless-steel-world-duplex.com

Exhibition Tickets

2 Day Exhibition Visitor Pass <ul style="list-style-type: none"> - Two days of access to the Duplex World exhibition - Two days of access to the Heat Exchanger World Europe exhibition - 2 days lunch and refreshments <p><i>NOTE: DOES NOT INCLUDE ACCESS TO THE CONFERENCE</i></p>	€45
1 Day Exhibition Visitor Pass <ul style="list-style-type: none"> - One day of access to Duplex World Exhibition - One day of access to the Heat Exchanger World Europe Exhibition - 1 day lunch and refreshments <p><i>NOTE: DOES NOT INCLUDE ACCESS TO THE CONFERENCE</i></p>	€25



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Duplex World Networking Dinner Tuesday 1 November

On board the SS Rotterdam	€85
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