



# **Release Notes**

COPRA® RF State-of-the-Art Roll Forming Design

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## **COPRA<sup>®</sup> RF version 2023**

data M Sheet Metal Solutions offers its customers a variety of software and hardware solutions as well as services in the field of roll forming. The programs COPRA<sup>®</sup> RF and COPRA<sup>®</sup> FEA RF for design, simulation and analysis are market leaders worldwide and form the basis for our COPRA<sup>®</sup> Roll Forming workflow.

COPRA<sup>®</sup> RF includes features specifically tailored to meet the needs and requirements of today's roll form designer.

#### Enhancements

- AutoCAD 2023 The version AutoCAD 2023 is supported
- AutoCAD Mechanical 2023 The version AutoCAD Mechanical 2023 is supported
- Inventor 2023 The version Inventor 2023 is supported
- **Simplified installation** The administrator no longer needs to start AutoCAD. AutoCAD profile creation is done entirely by the user when AutoCAD is started for the first time.
- , ,
- New roll attribute 'Number like spacer ring'

This allows simple rolls to be automatically assigned roll numbers according to the 'diameter x width' scheme without treating them like spacer rings in downstream processes (e.g. single roll dimensioning).

• Extended material properties

The company voestalpine Stahl GmbH provides the material properties for 90 steel strips. These contain all relevant parameters and flow curves for use in COPRA<sup>®</sup> FEA RF.

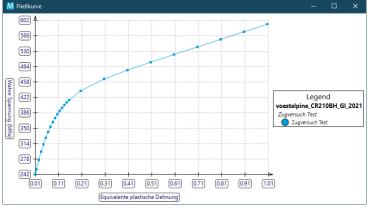
The material properties are fully integrated into the COPRA<sup>®</sup> workflow and are thus automatically available for the subsequent simulation calculations in COPRA<sup>®</sup> FEA RF.



In the material dialog, the additional manufacturer material data can be displayed for selection.

0	Los	ad material - Currently used material: H	55				Show search bar	Show vendor materials Filter:	: Strip Material Dis	play mode: Sele
Aate	rial type	Subtype								
		Name	<ul> <li>Description</li> </ul>	Where used	Common Name	VDA Name	EN Name	Vendor	Material type	Subtype
				L						
_		(14 items) Cold Rolled Steels (76 items)								
_		omplex Phase Steels (CP) (12 items)								
	M	voestalpine_CR1000Y1370T-CH_UC-EG_2021			CP1400-HD			voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steels
		voestalpine_CR570Y780T-CP_GI_2021			CP800	CR570Y780T-CP	HCT780C	voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel:
	2	voestalpine_CR570Y780T-CP_UC-EG_2021			CP800	CR570Y780T-CP	HCT780C	voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel
	2	voestalpine_CR580Y980T-CH_H8_UC-EG_2021			CP1000-HD			voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel
	2	voestalpine_CR780Y980T-CH_GI_2021			CP1000-HD			voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel
		voestalpine_CR780Y980T-CH_UC-EG_2021			CP1000-HD			voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel
		voestalpine_CR780Y980T-CP_GI_2021			CP1000	CR780Y980T-CP	HCT980C	voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel
		voestalpine_CR780Y980T-CP_UC-EG_2021			CP1000	CR780Y980T-CP	HCT980C	voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steels
		voestalpine_CR800Y1180T-CP_GA_2021			CP1200			voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel
		voestalpine_CR900Y1180T-CH_UC-EG_2021			CP1200-HD			voestalpine Stahl GmbH	Cold Rolled Steels	Complex Phase Steel

Additionally the flow curve from the stored material data of a material can be displayed in a diagram.



In edit mode additional material can be imported. Use a XML file to import tensile test data to materials.

An example for this is the file "data\_M\_demo\_material.xml", which is located in the directory  $\langle COPRA^{(R)} \rangle$  installation directory  $\langle Material. \rangle$ 



• Example " data\_M\_demo\_material.xml"

```
<MaterialList>
 Start of the first material
  <ApMaterial xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <!--
   The material's name
    <Name>data_M_demo_material</Name>
   The material's yield strength
    ---
    <YieldStrength>205.0</YieldStrength>
    <!--
    The material's ultimate tensile strength
    <\!\!\texttt{UltimateTensileStrength}\!\!>\!\!305.0\!<\!/\texttt{UltimateTensileStrength}\!\!>
    <1--
   The material's A80 elongation
    <ElongationBreakA80>20.0</ElongationBreakA80>
    <!--
    The material's specific gravity
    <SpecificGravity>7850.0</SpecificGravity>
    <!-
    The material's hardness
    <Hardness>0</Hardness>
    <!--
    The material's poisson ratio
    <PoissonRatio>0.3</PoissonRatio>
    <!--
    The material's young's modulus
    <YoungsModule>210000</YoungsModule>
    <!--
    The material's flow stress
   <FlowStress>0</FlowStress>
```

In edit mode selected material in the table can also be exported into a material file (.xml).



#### **Other improvements**

- Setting for number of visible decimal places for distance ring numbering introduced
- Setting introduced that allows fixed roll attributes or a fixed roll number to be retained for copies of rolls
- Parameters last used when creating parametric rolls are saved in order to have them available again the next time they are used
- Improved readability of installation side-dependent roll attributes (e.g. retaining rings left/right)
- Continuous roll numbering accelerated throughout the plant
- Fixed problems when inserting passes
- Fixed problems with incorrect installation side-dependent roll attributes for rolls with symmetrical outer contour
- Some rolls were not mirrored in 'Mirror database'
- Incorrect referencing of info parts after inserting passes
- Incorrect transfer of project data from archive files fixed
- Incorrect numbering with continuous roll numbering fixed
- Faulty full section display of rolls on accessory axes fixed
- Incorrect transfer of sheet thickness from old archive file fixed



#### 2023.1 Enhancements

- AutoCAD 2024 The version AutoCAD 2024 is supported
- AutoCAD Mechanical 2024 The version AutoCAD Mechanical 2024 is supported
- Inventor 2024 The version Inventor 2024 is supported
- COPRA® RF Standalone-Version 2024 COPRA® RF Standalone Version is now available based on AutoCAD 2024 in addition to AutoCAD 2021.
- Update von COPRA® RF Standalone An update of COPRA® RF Standalone is now possible without completely uninstalling and reinstalling the installed Standalone version.

### 2023.1 Additional Developments and Notes

- Cadfinder now displays a list of all recently used projects, making it easier to switch between projects.
- Multiple AutoCAD documents can now be printed into a single PDF.
- The roll attributes can now be extended as desired by defining your own attributes.
- After importing a COPRA® project into Inventor, all attributes defined in the project are now available as iProperties.



