

# Stress analysis of 4KBMFEM

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## 1. File Information

**Model name:** 4KBMFEM  
**Model location:** \\Thyra\faelles\Watercare\4KBM\4KBMFEM.SLDprt  
**Results location:** c:\temp  
**Study name:** COSMOSXpressStudy (-Default-)

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## 2. Materials

No.	Part Name	Material	Mass	Volume
1	4KBMFEM	<a href="#">[SW]Rot PE HD</a>	302.402 kg	0.317649 m <sup>3</sup>

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## 3. Load & Restraint Information

### Restraint

<b>Restraint1</b> <4KBMFEM>	on <b>35 Face(s)</b> immovable (no translation).
<b>Description:</b>	

### Load

<b>Load1</b> <4KBMFEM>	on <b>92 Face(s)</b> with Pressure <b>20000 N/m<sup>2</sup></b> along direction normal to selected face
<b>Description:</b>	

## 4. Study Property

### Mesh Information

Mesh Type:	Solid mesh
Mesher Used:	Standard
Automatic Transition:	Off
Smooth Surface:	On
Jacobian Check:	4 Points
Element Size:	54.587 mm
Tolerance:	2.7294 mm
Quality:	High
Number of elements:	63511
Number of nodes:	126662

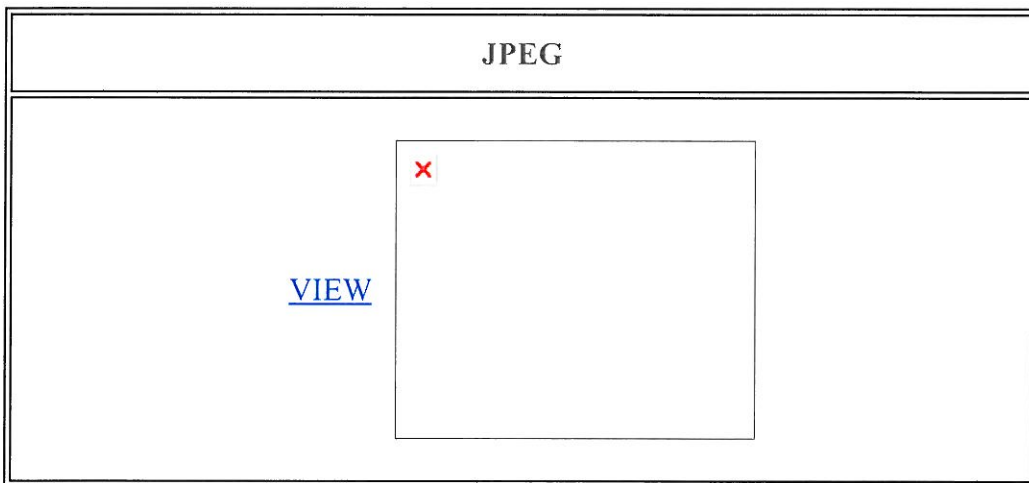
### Solver Information

Quality:	High
Solver Type:	FFE

## 5. Stress Results

Name	Type	Min	Location	Max	Location
Plot1	VON: von Mises stress	1.70479 N/m <sup>2</sup>	(1429.64 mm, 0 mm, 272.997 mm)	1.19613e+007 N/m <sup>2</sup>	(2512.3 mm, -1438 mm, 81.2537 mm)

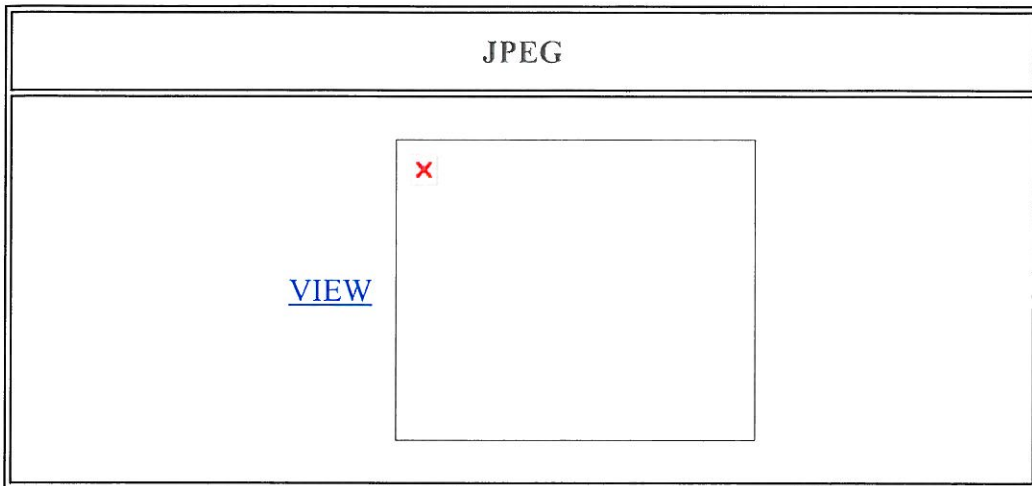
4KBMFEM-COSMOSXpressStudy-Stress-Plot1



## 6. Displacement Results

Name	Type	Min	Location	Max	Location
Plot2	URES: Resultant displacement	0 mm	(2009.96 mm, 0 mm, 152.744 mm)	26.5837 mm	(2765.95 mm, -1271.95 mm, 28.4455 mm)

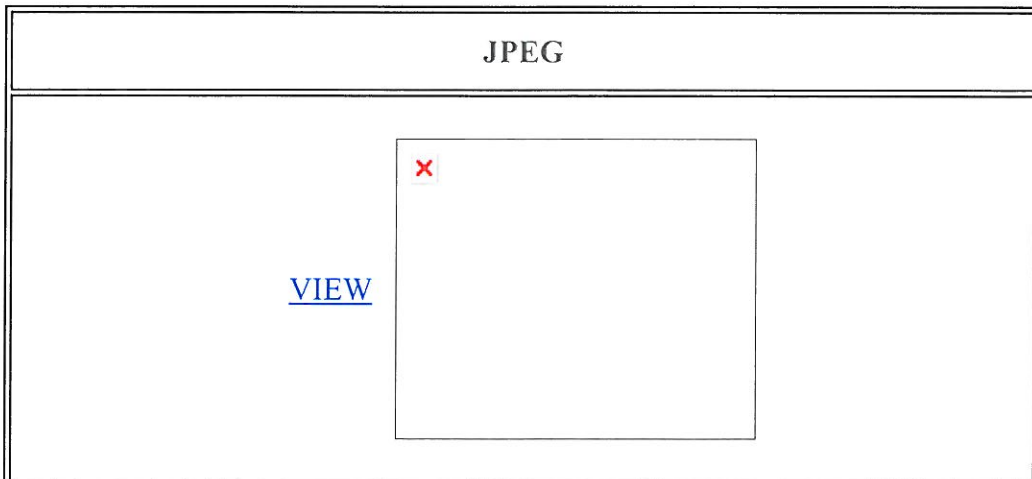
### 4KBMFEM-COSMOSXpressStudy-Displacement-Plot2



## 7. Deformation Results

Plot No.	Scale Factor
1	13.046

### 4KBMFEM-COSMOSXpressStudy-Deformation-Plot3



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## 8. Appendix

**Material name:** [SW]Rot PE HD  
**Description:**  
**Material Source:** Used SolidWorks material  
**Material Library Name:**  
**Material Model Type:** Linear Elastic Isotropic

Property Name	Value	Units
Elastic modulus	7.1e+008	N/m <sup>2</sup>
Poisson's ratio	0.4101	NA
Mass density	952	kg/m <sup>3</sup>
Yield strength	0	N/m <sup>2</sup>

### Note:

COSMOSXpress design analysis results are based on linear static analysis and the material is assumed isotropic. Linear static analysis assumes that: 1) the material behavior is linear complying with Hooke's law, 2) induced displacements are adequately small to ignore changes in stiffness due to loading, and 3) loads are applied slowly in order to ignore dynamic effects.

Do not base your design decisions solely on the data presented in this report. Use this information in conjunction with experimental data and practical experience. Field testing is mandatory to validate your final design. COSMOSXpress helps you reduce your time-to-market by reducing but not eliminating field tests.

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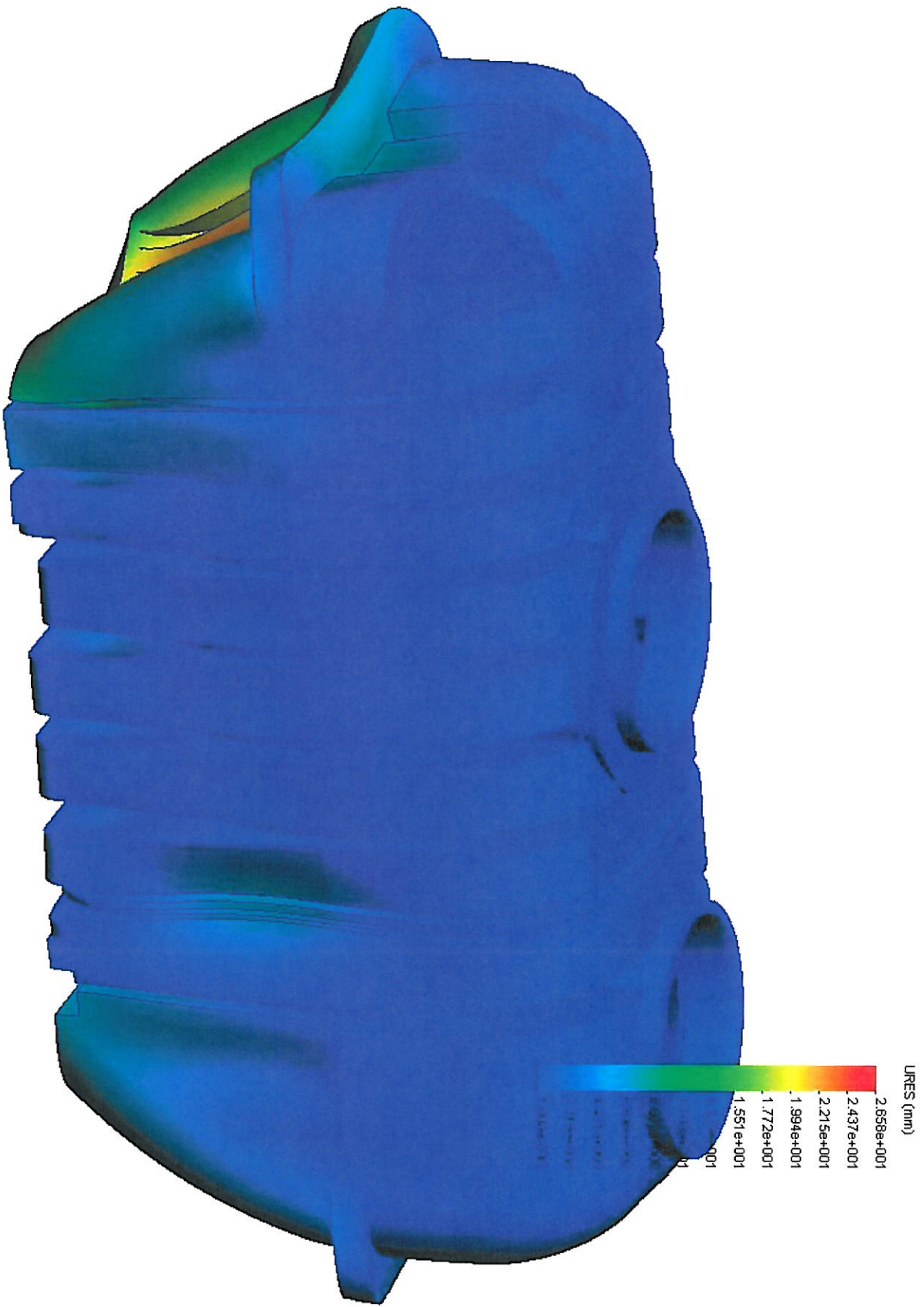
Deformation x 13

Plot 1



Deformation X B

Plot 2



Deformation X 13

Plot 3

