

# INVENTOR2016 + REVIT 2016



AUTODESK  
**REVIT**



AUTODESK  
**INVENTOR**

MATERIAL AND BIM-EXCHANGE

# 1 PREFERRED (AND REQUIRED) WORKFLOW

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## 1.1 CONSTRUCTION DESIGN IN INVENTOR

Construction design of shop fitting furniture / interior after design approval and order by customer

## 1.2 CREATING OF NEW MATERIALS IN INVENTOR

Creating of a new Material incl. Appearance with Maps, physical Properties.  
Save this Material into a proprietary Material Library.  
Assign this Material to the Inventor Part

## 1.3 EXPORT OF THE MODEL (OUT OF INVENTOR)

Export of the Inventor Model (Parts and Assemblies) by using the BIM-Exchange as ADSK-File.  
(If necessary simplified Model)

## 1.4 IMPORT OF THE MODEL (INTO REVIT)

Import of the Models into Revit. Adding of Parameters for Schedules and Evaluation.  
Using of this families for further planning in Revit

## 1.5 USING OF THE SAME MATERIAL LIBRARY IN REVIT AS IN INVENTOR

We would like to use the same Material Library in Inventor and in Revit.  
Sometimes it is necessary to create new Families in Revit. For this Families we would like to assign the Material which is already created in Inventor (to get the same Appearance).

# 2 “BREADBOARD 1” INVENTOR 2016 PART AND NEW MATERIAL

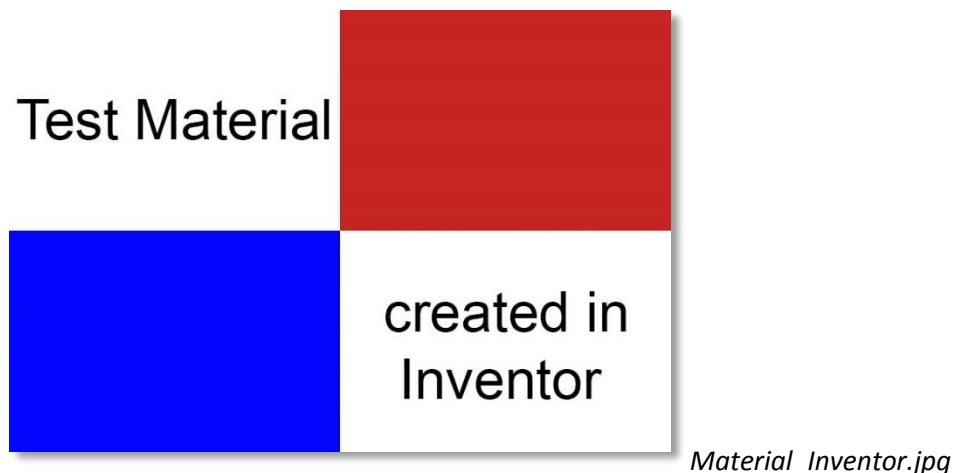
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## 2.1 NEW PROJECT

Creating a new single user Project.  
Stored in a new folder on users Desktop

## 2.2 MATERIAL MAP

Creating a new Material Map in Photoshop  
Size: 150x100 mm, Resolution 150DPI, saved as JPG-File, medium Quality (44KB)

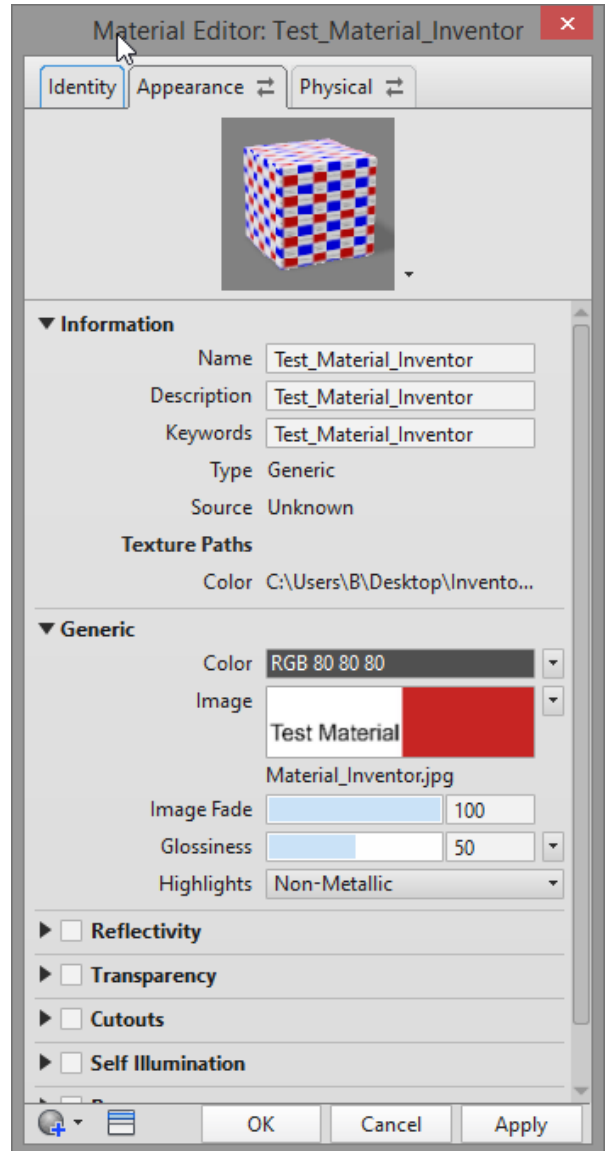
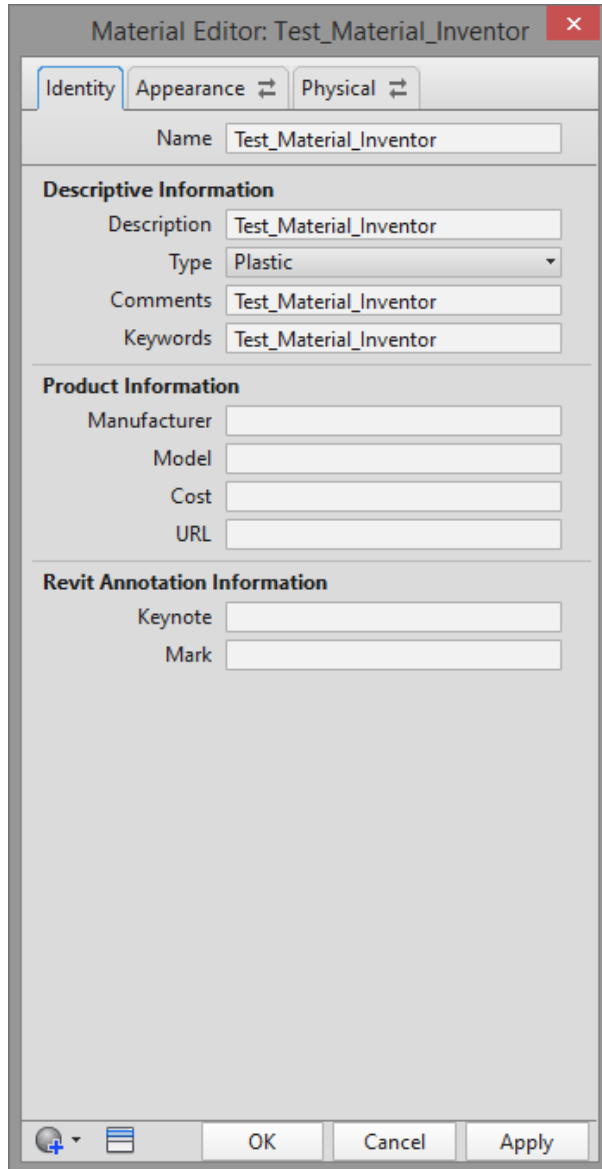


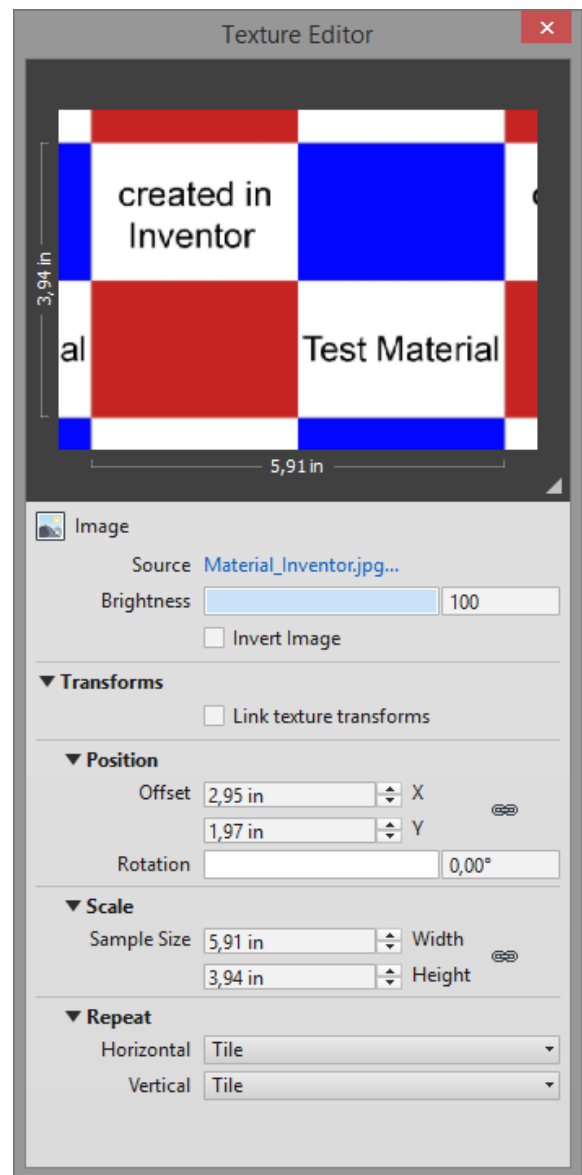
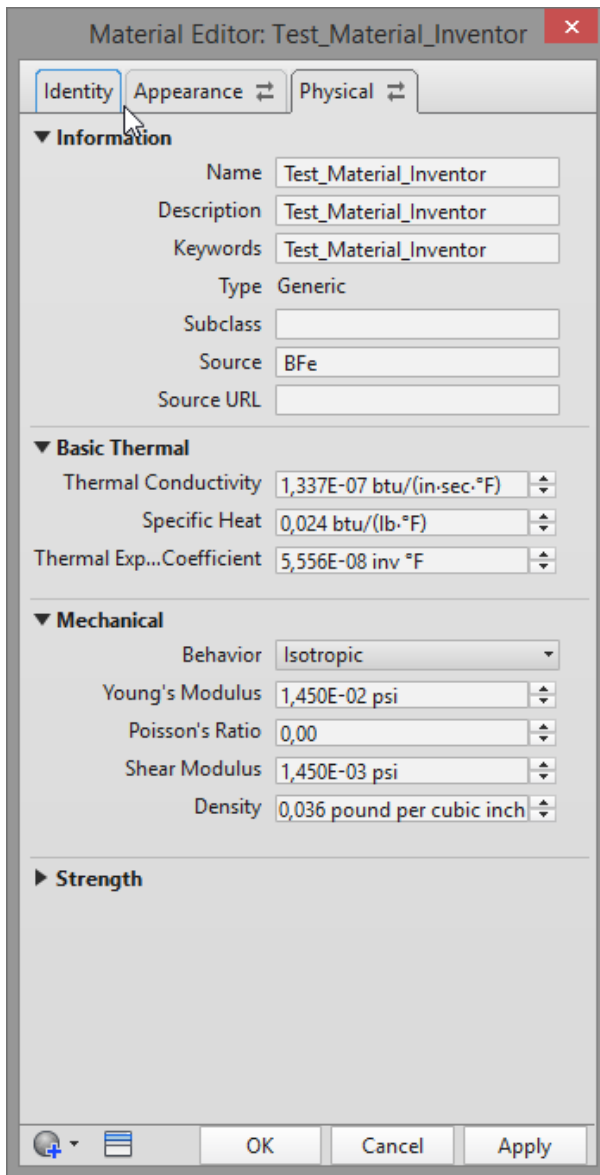
### 2.3 NEW PART

A simple cube with edge length 150x100x10mm created in Inventor and saved as *Test\_Texture\_Inventor.ipt*

### 2.4 NEW MATERIAL

Creating of a new Material incl. Appearance and physical Properties.  
(Deliberately provided the position of the maps with an offset)





BTW: Have a look at the Dimension! Shown are INCH, but the Part-Template was metric MM !

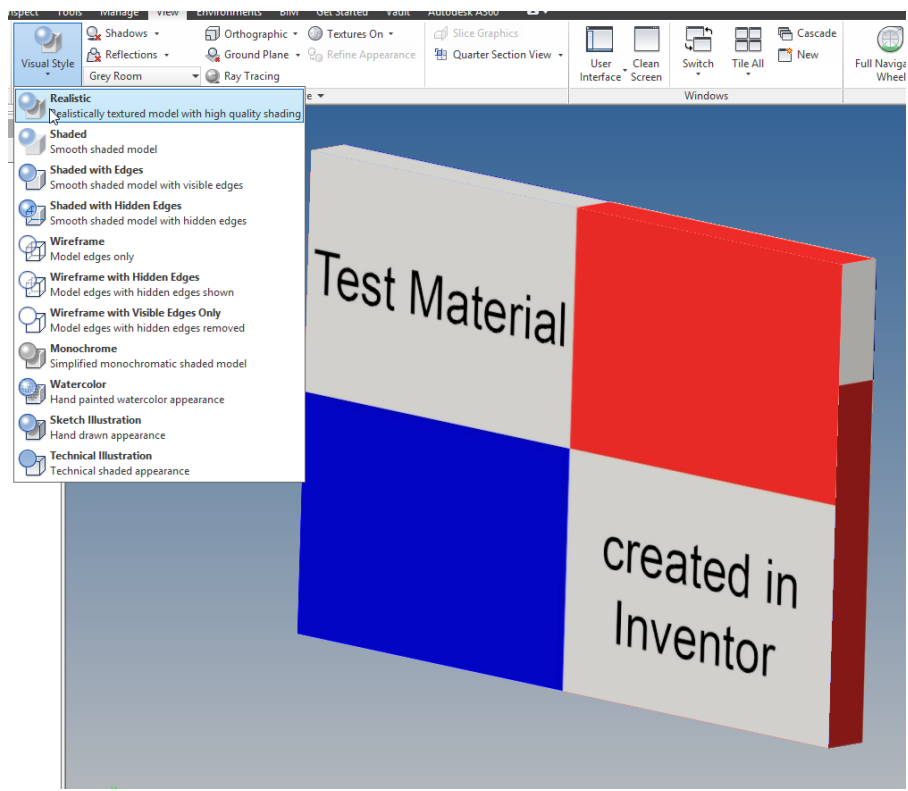
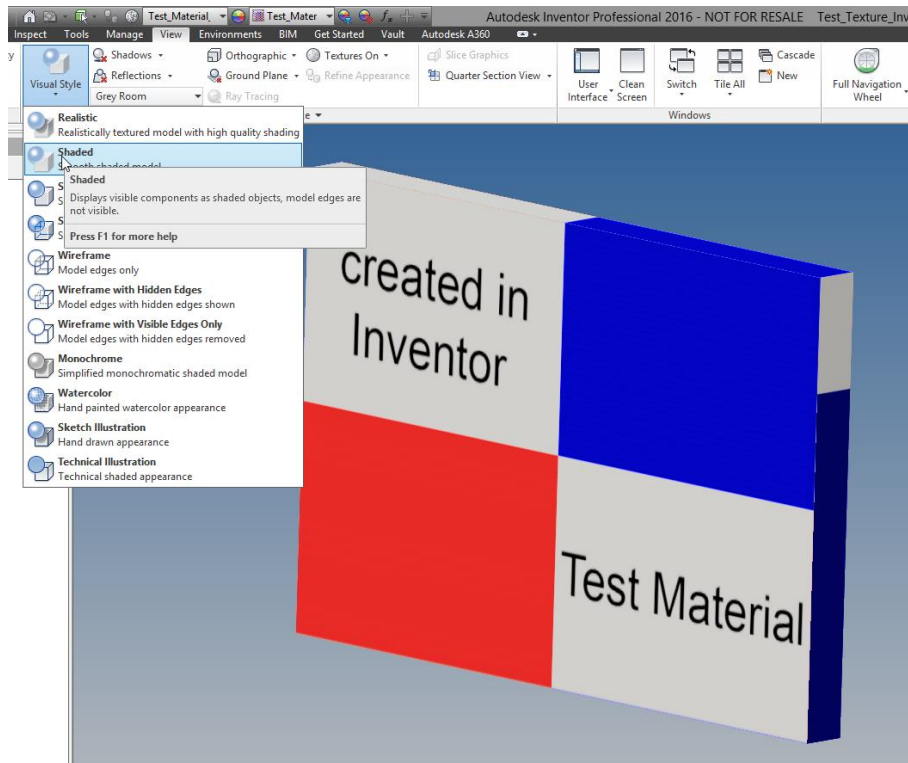
Size 150x100mm

Offset 75 and 50mm



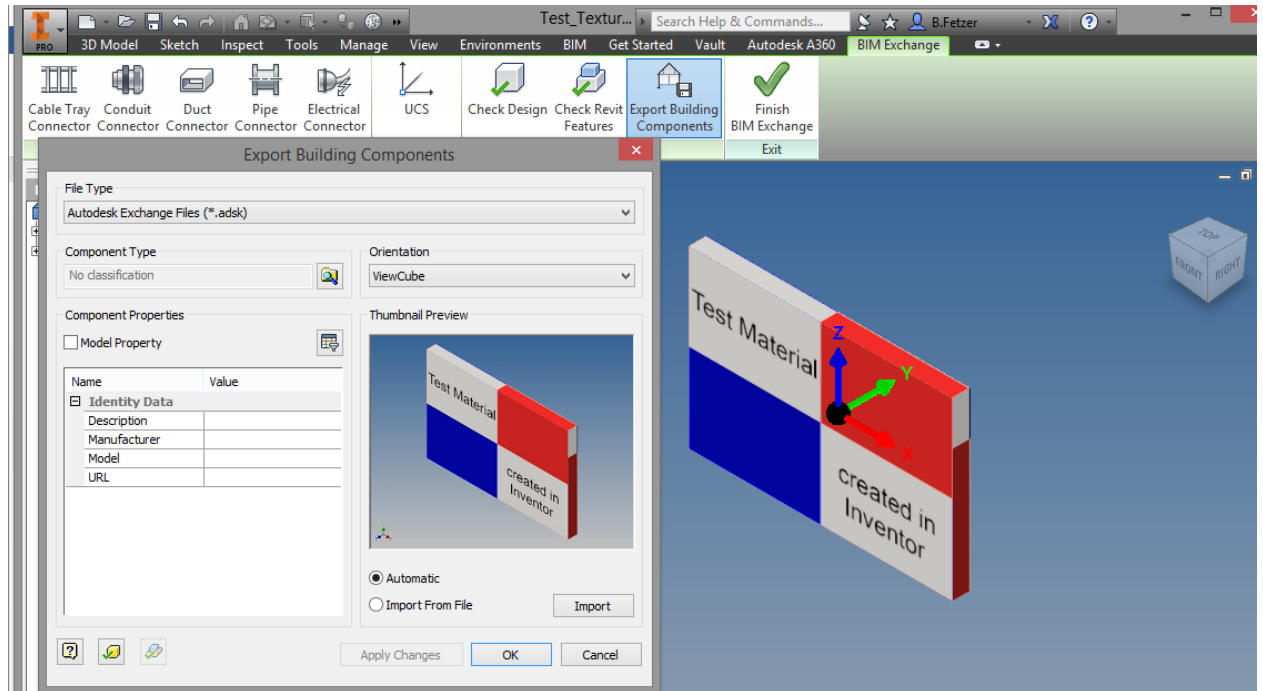
## 2.6 STRANGE BEHAVIOUR OF THE MATERIAL

The Appearance Map is shown in a different way at the visual Style “realistic” and the Style “shaded”



## 2.7 BIM EXCHANGE AS ADSK

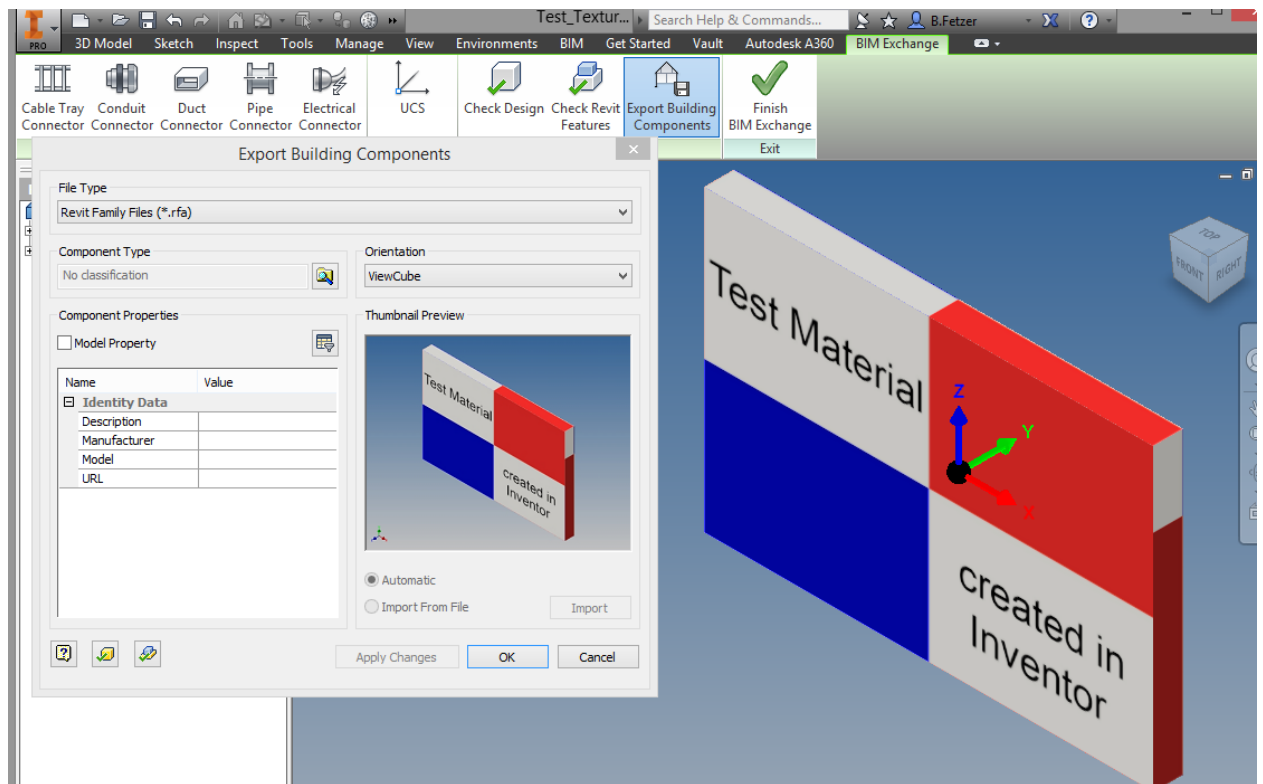
Export out of Inventor as ADSK-File



File Name *Test\_Texture\_Inventor\_adsk.adsk*

## 2.8 BIM EXCHANGE AS RFA

Export out of Inventor as RFA-File

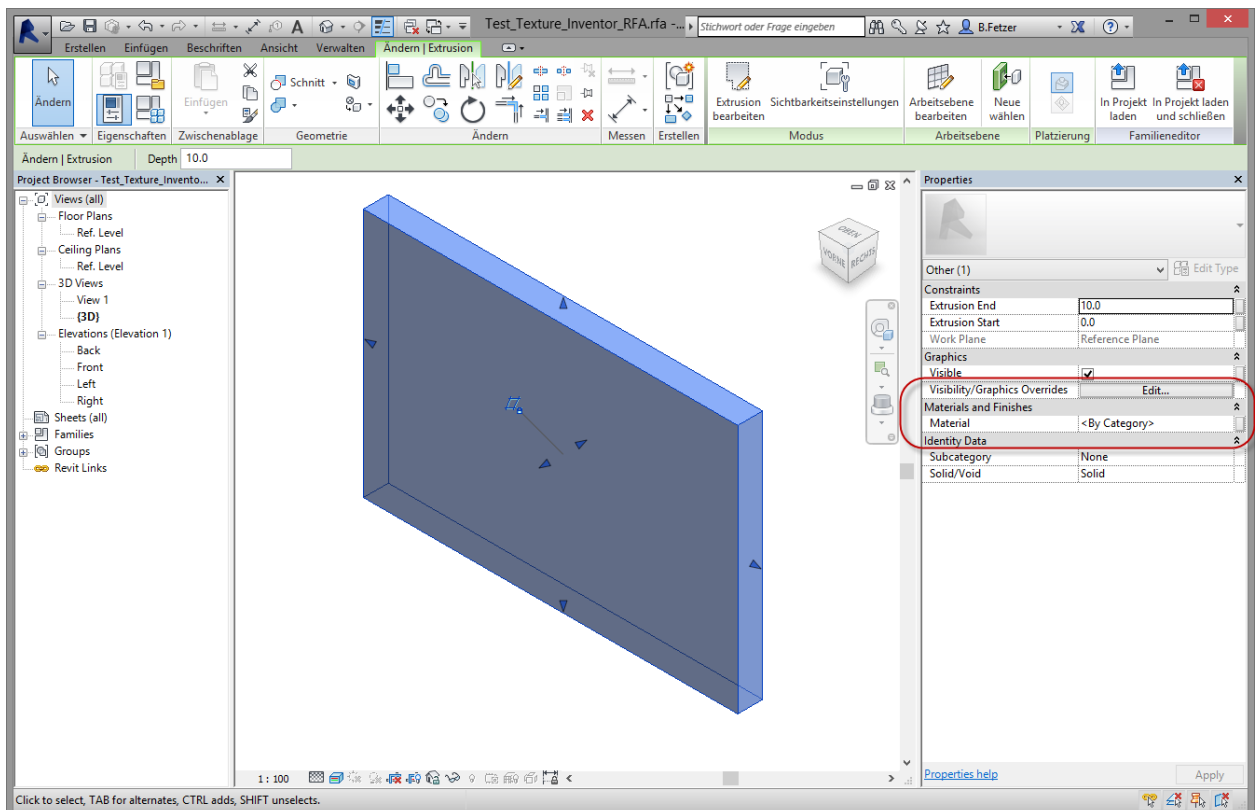
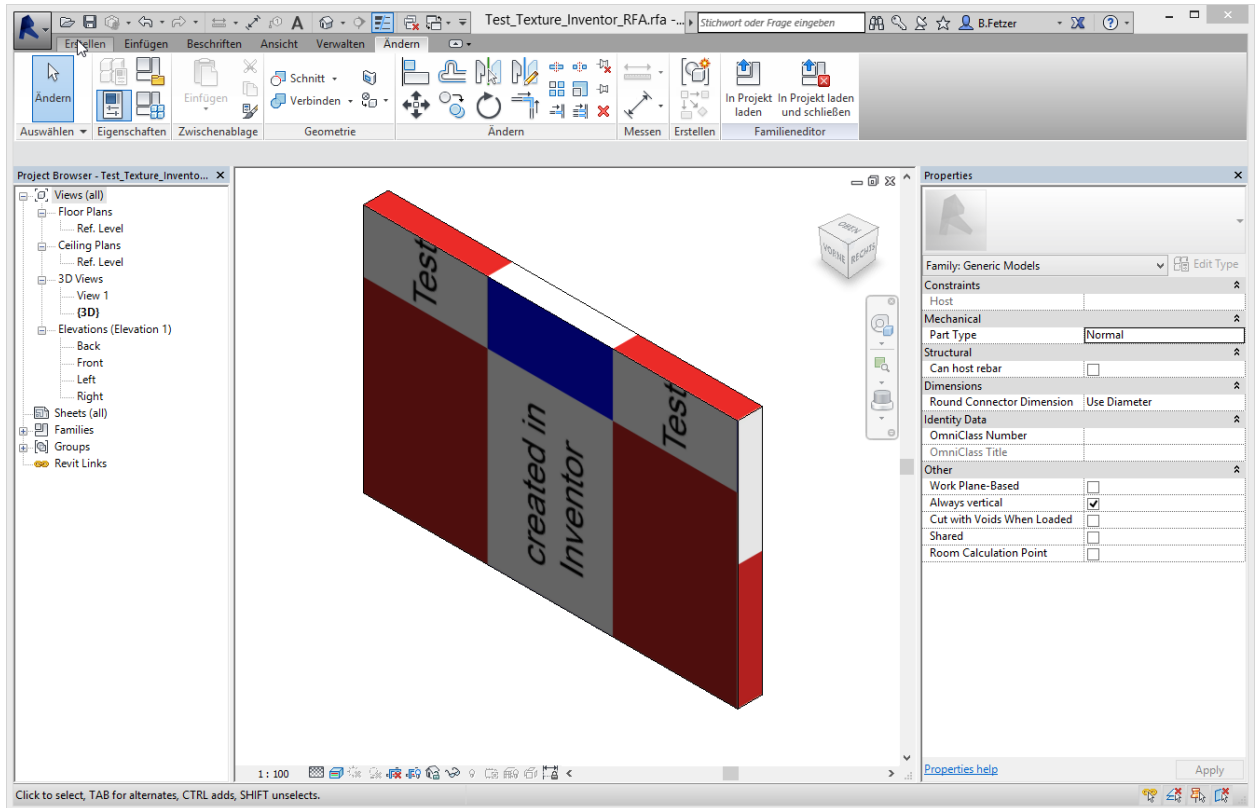


File Name *Test\_Texture\_Inventor\_RFA.rfa*

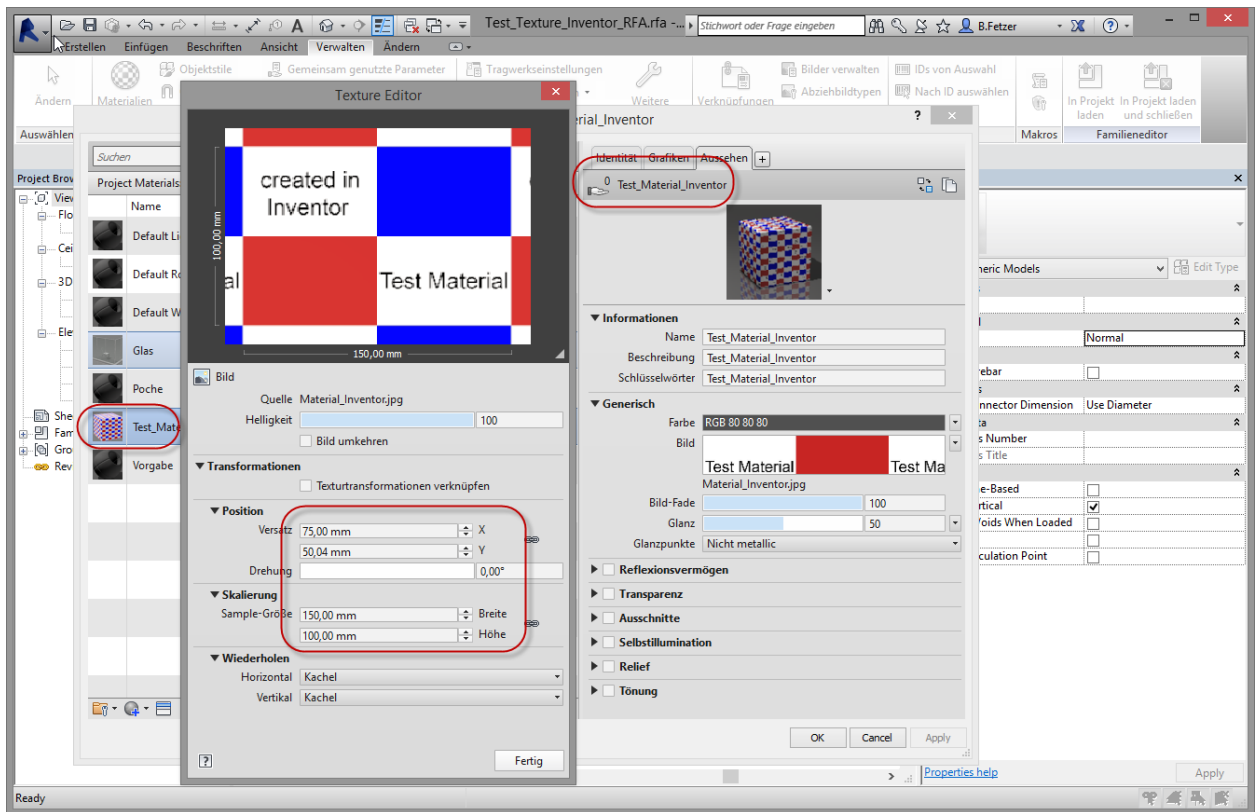
# 3 IMPORT IN REVIT (RFA)

## 3.1 OPEN THE FAMILY-FILE

Open the File *Test\_Texture\_Inventor\_RFA.rfa* with Revit 2016

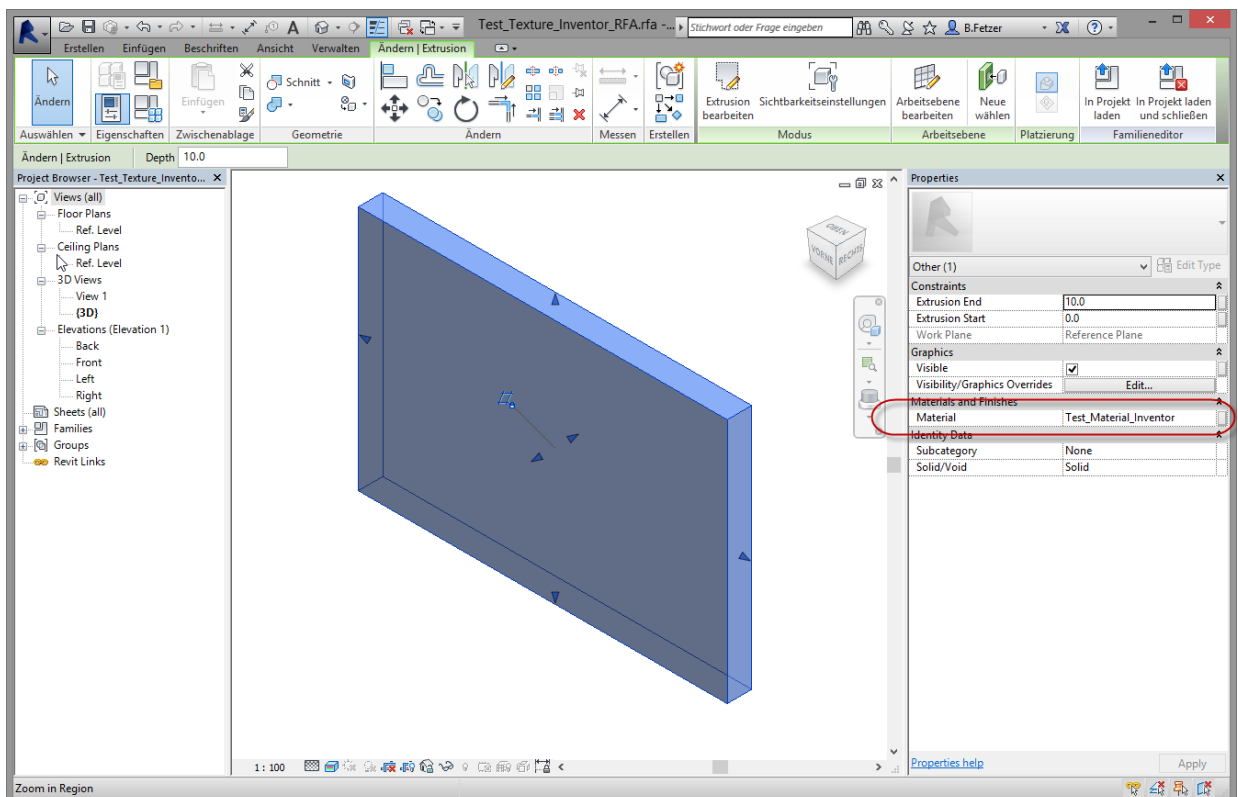


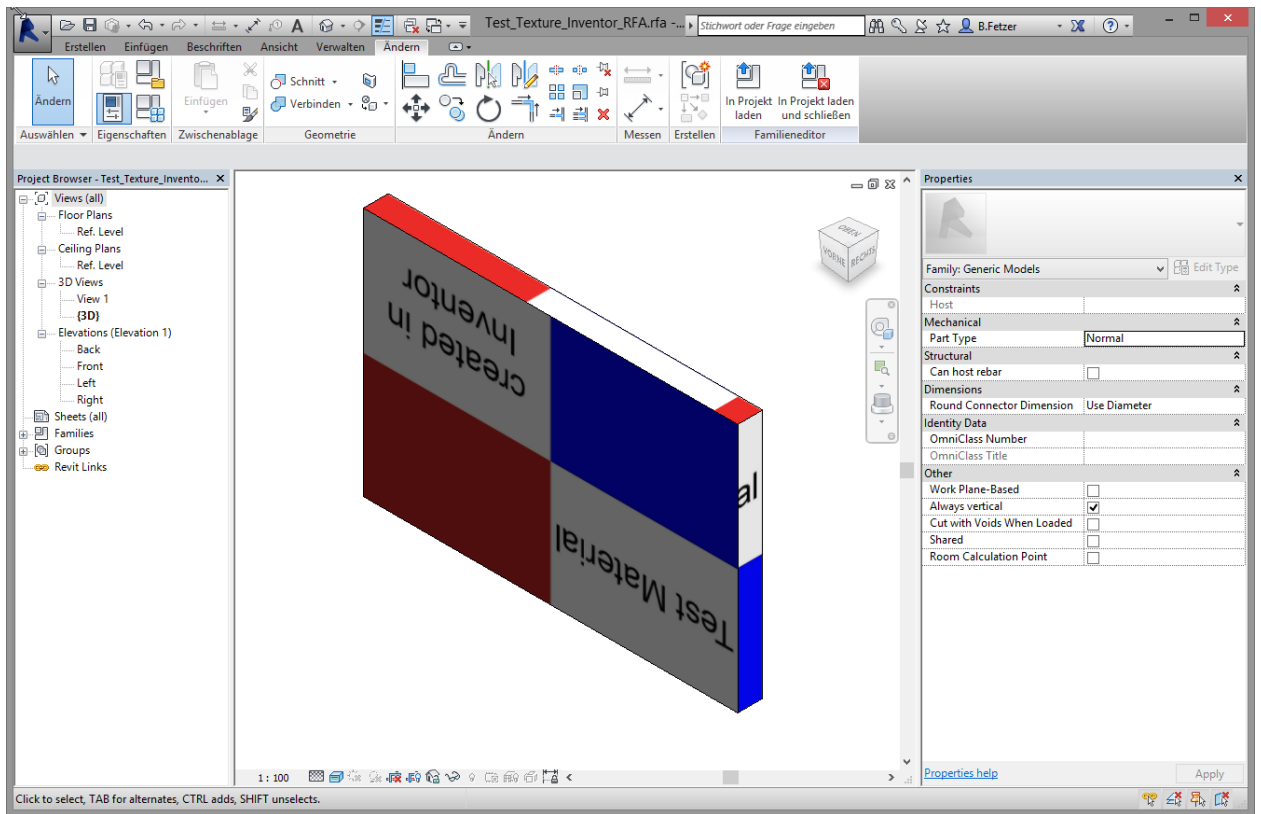




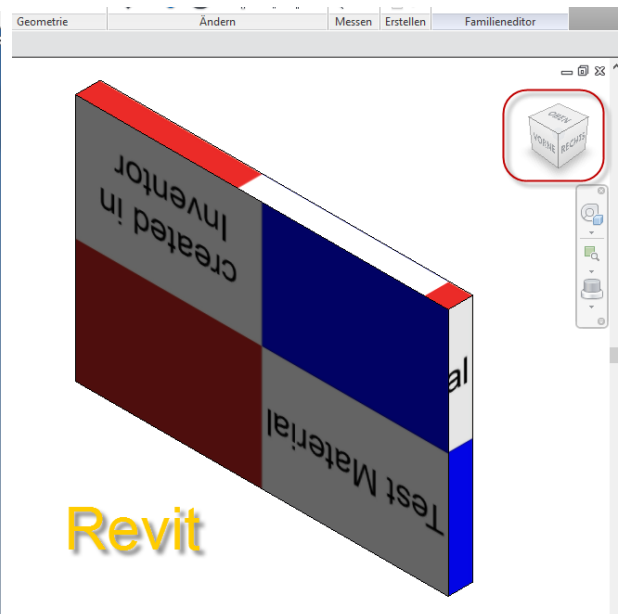
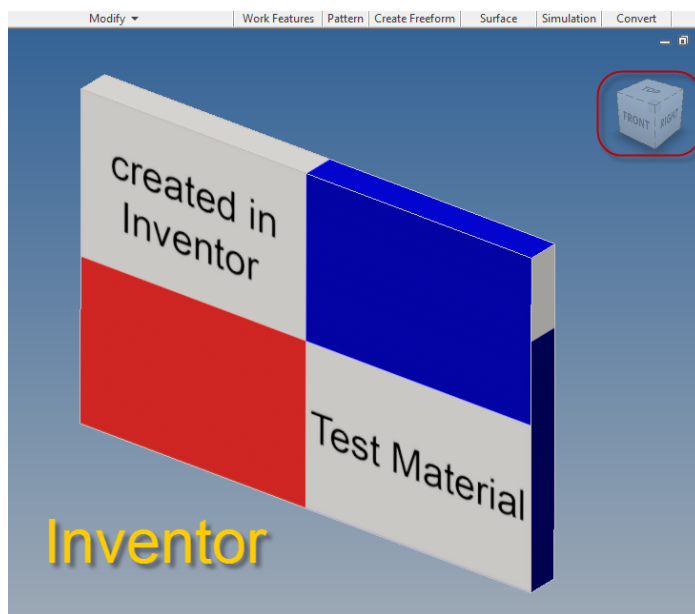
- Material is shown rotated by 90 °
- material is not assigned to the object , but is nevertheless shown
- material is imported without physical properties

### 3.2 ASSIGN OF THE MATERIAL IN REVIT





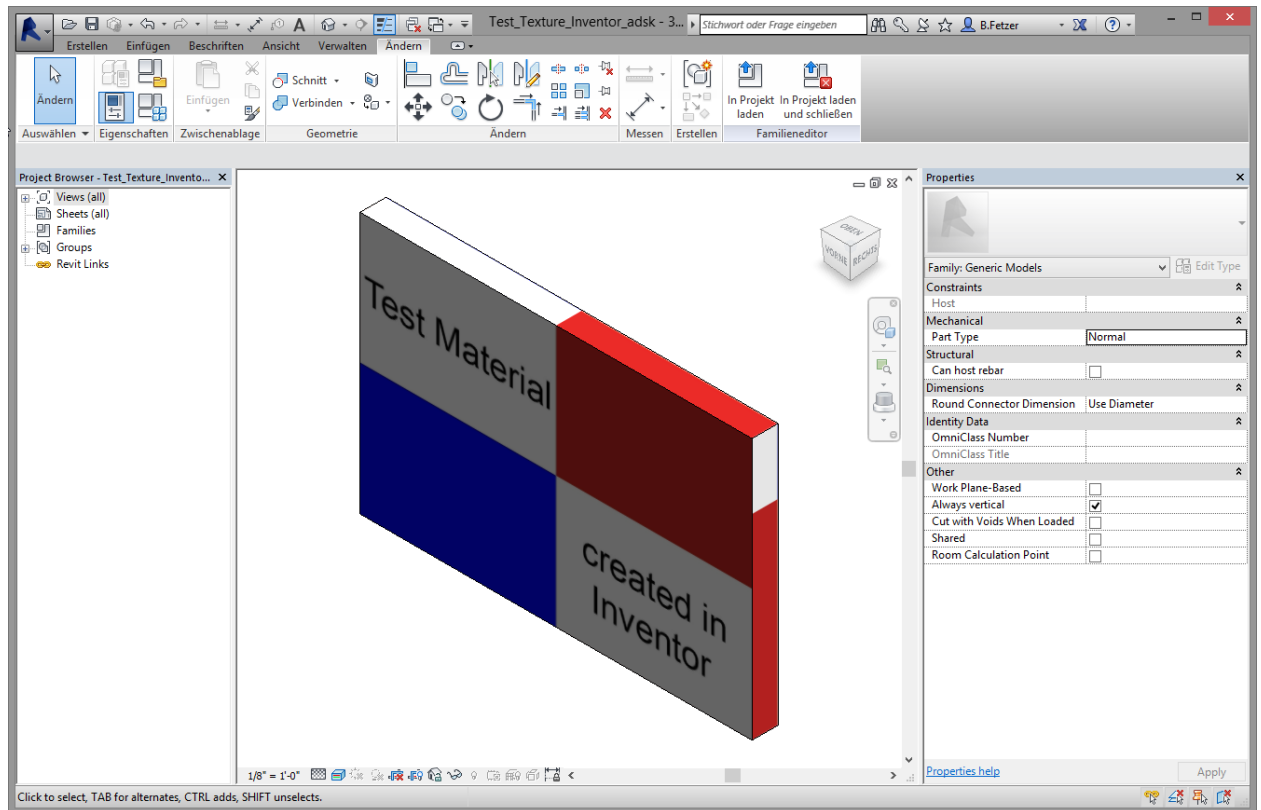
If the material explicitly assigned to the object, it is again rotated by 90 ° and is shown by 180 ° now



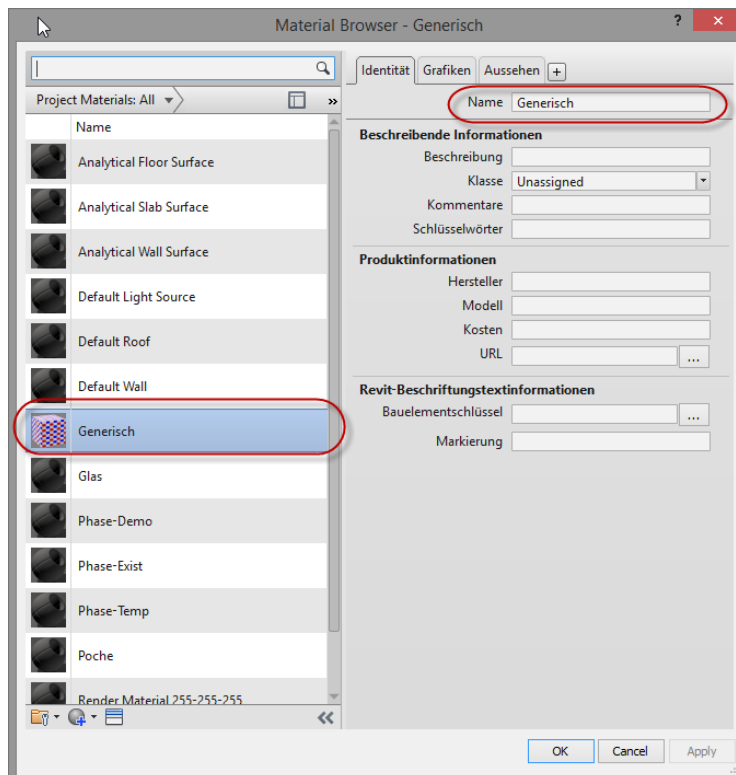
## 4 IMPORT IN REVIT (RFA)

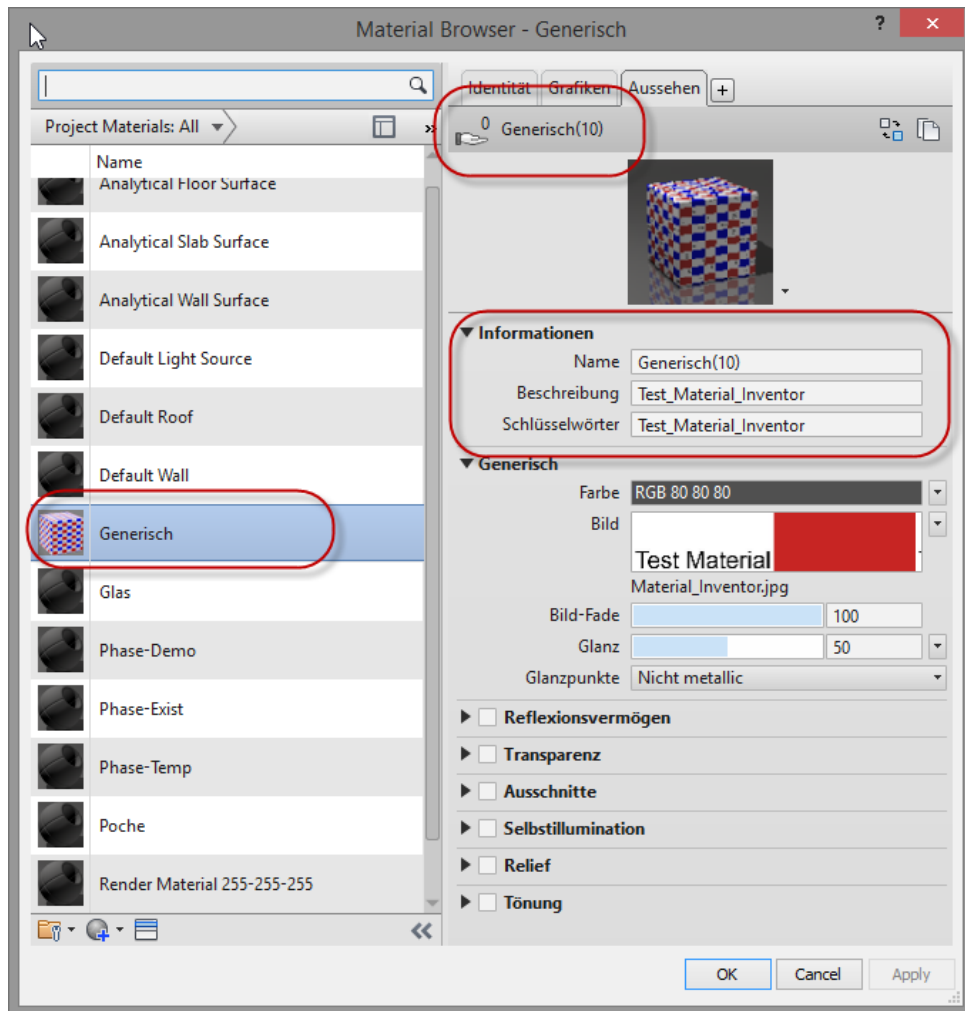
### 4.1 OPEN OF THE ADSK-FILE

Open the File *Test\_Texture\_Inventor\_ADSK.adsk* with Revit 2016



The Material is shown correctly





- Material is named “Generic”
- The Appearance is named “Generic”, but the Description and the Keywords are named as in Inventor
- It is not possible to rename the Material

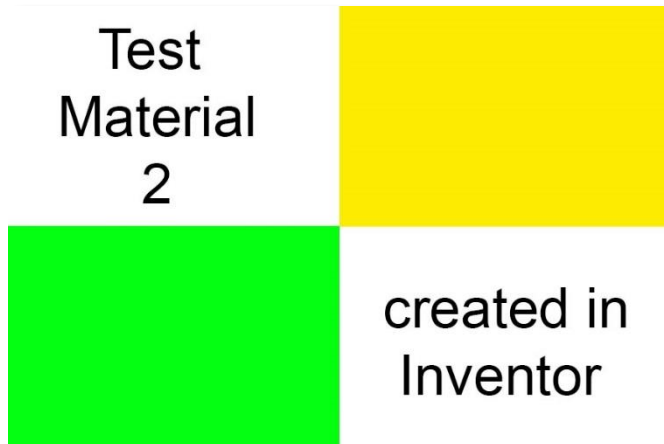
# 5 “BREADBOARD 2” INVENTOR 2016

## ASSEMBLY AND NEW MATERIAL

### 5.1 MATERIAL MAP

Creating a new Material Map in Photoshop

Size: 150x100 mm, Resolution 150DPI, saved as JPG-File, medium Quality (44KB)



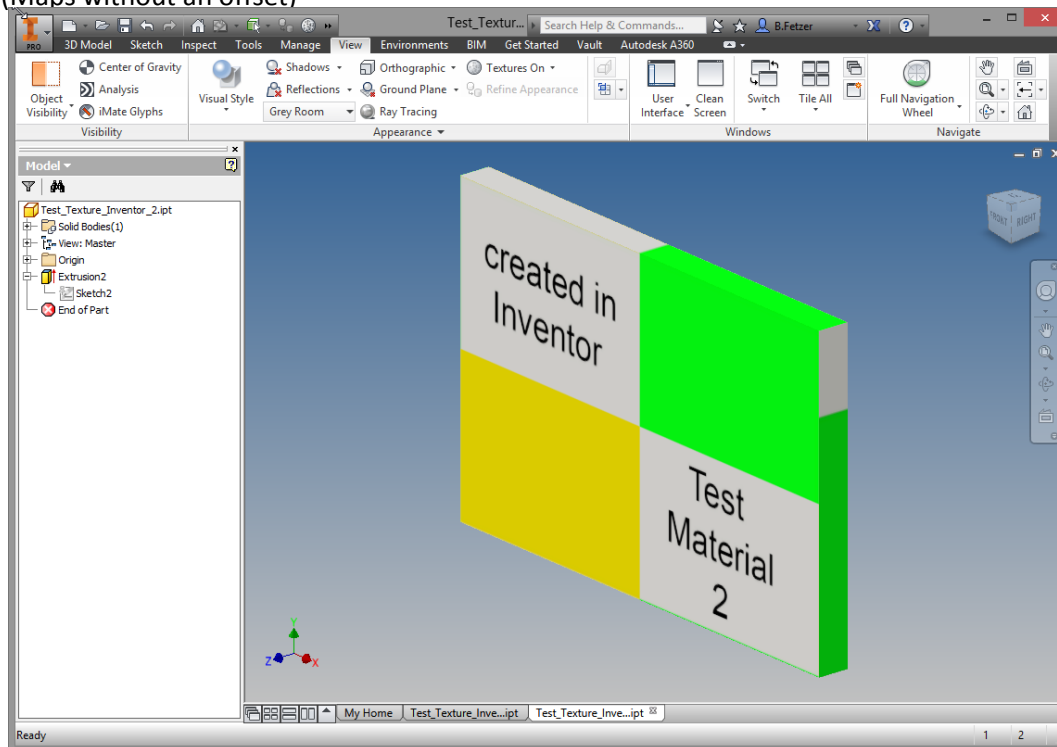
Material\_Inventor\_2.jpg

### 5.2 NEW PART

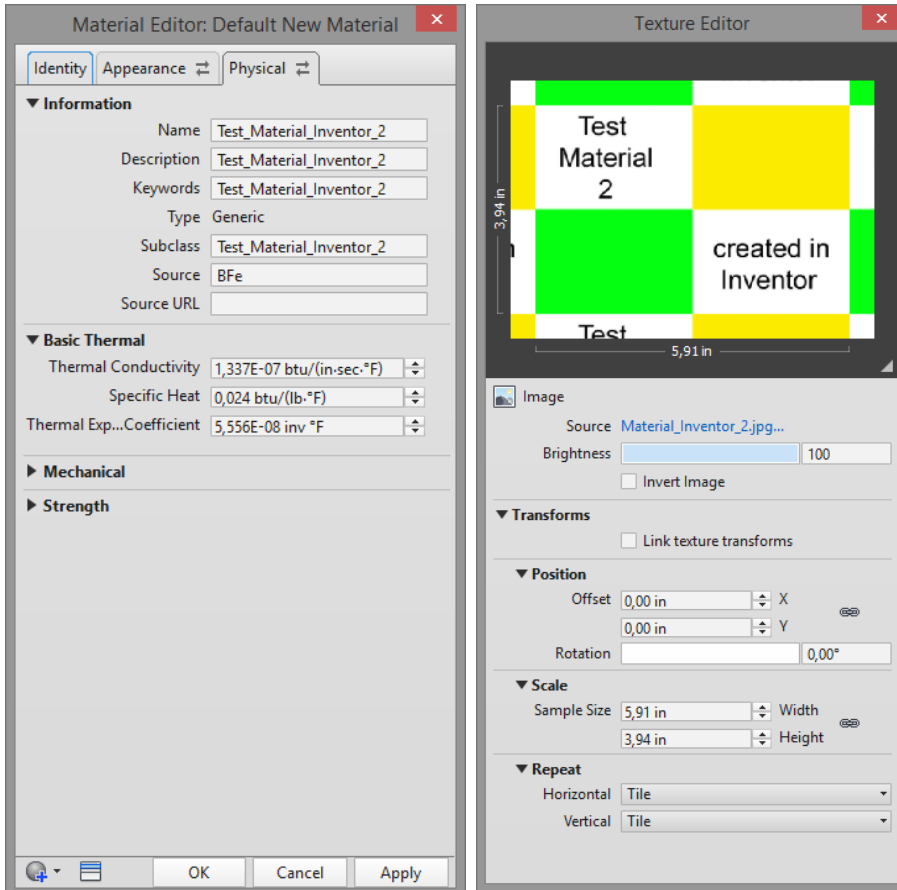
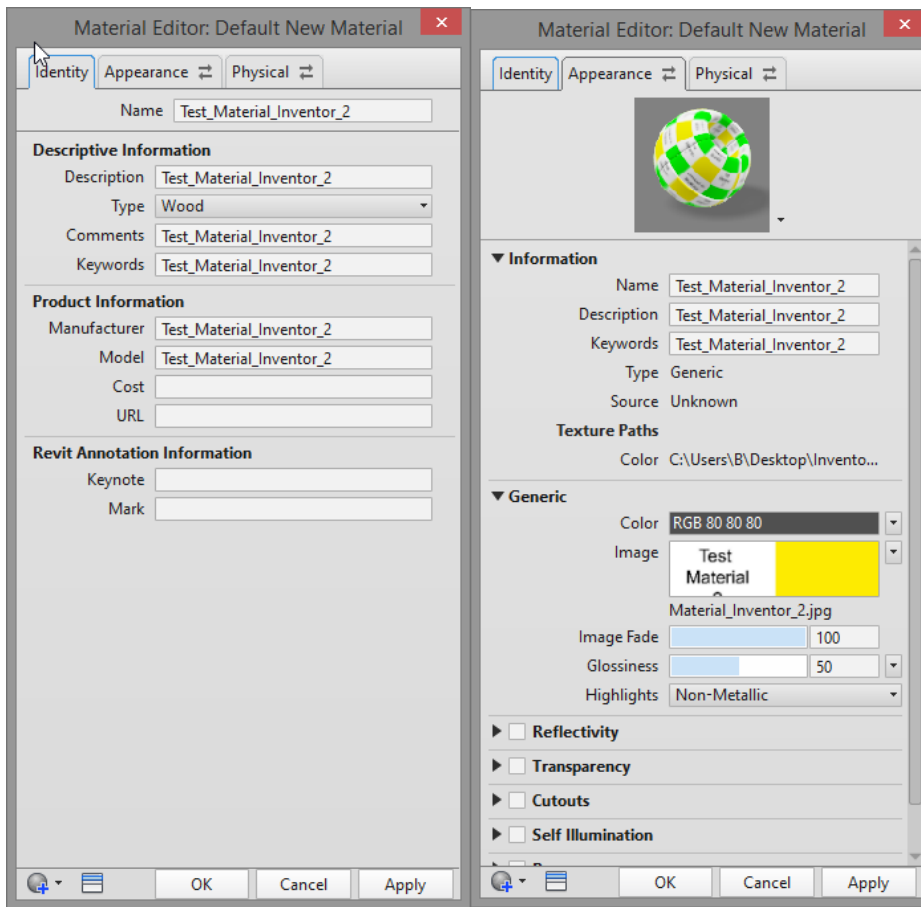
A second simple cube with edge length 150x100x10mm created in Inventor and saved as *Test\_Texture\_Inventor\_2.ipt*

### 5.3 NEW MATERIAL

Creating of a new Material incl. Appearance and physical Properties.  
(Maps without an offset)



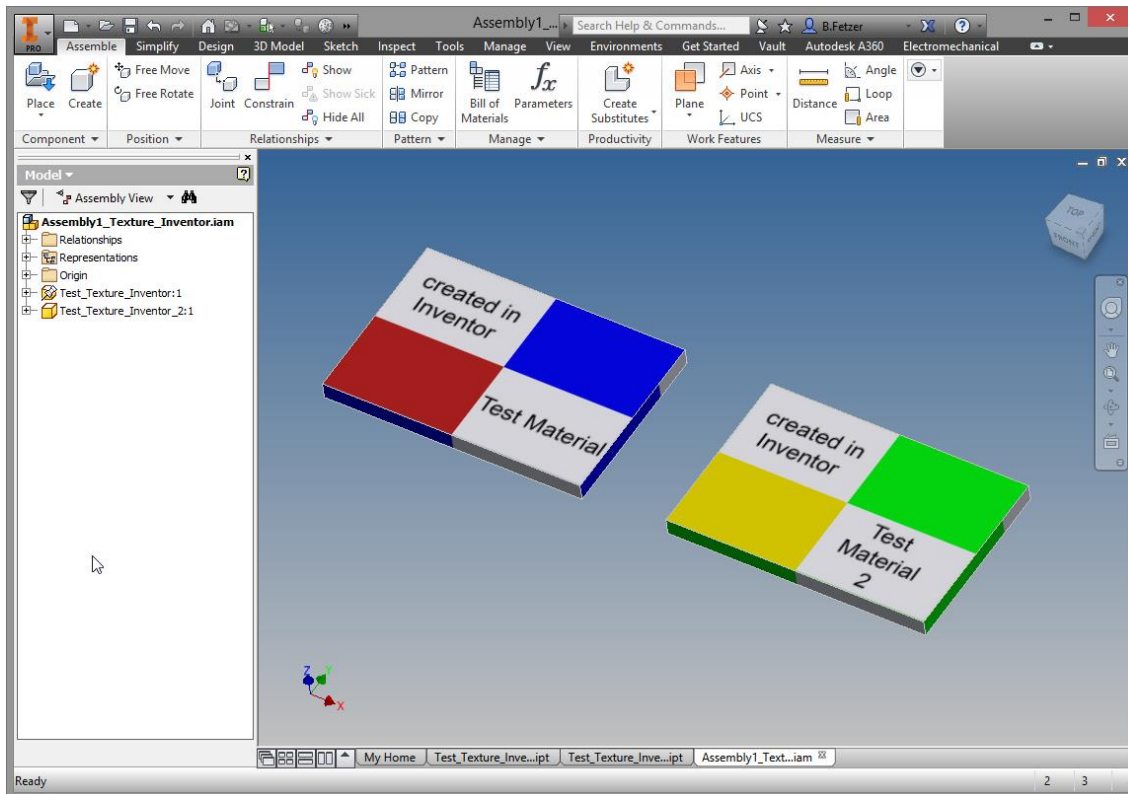
The Appearance Map is shown in the same way at the visual Style “realistic” and the Style “shaded”



## 5.4 NEW ASSEMBLY

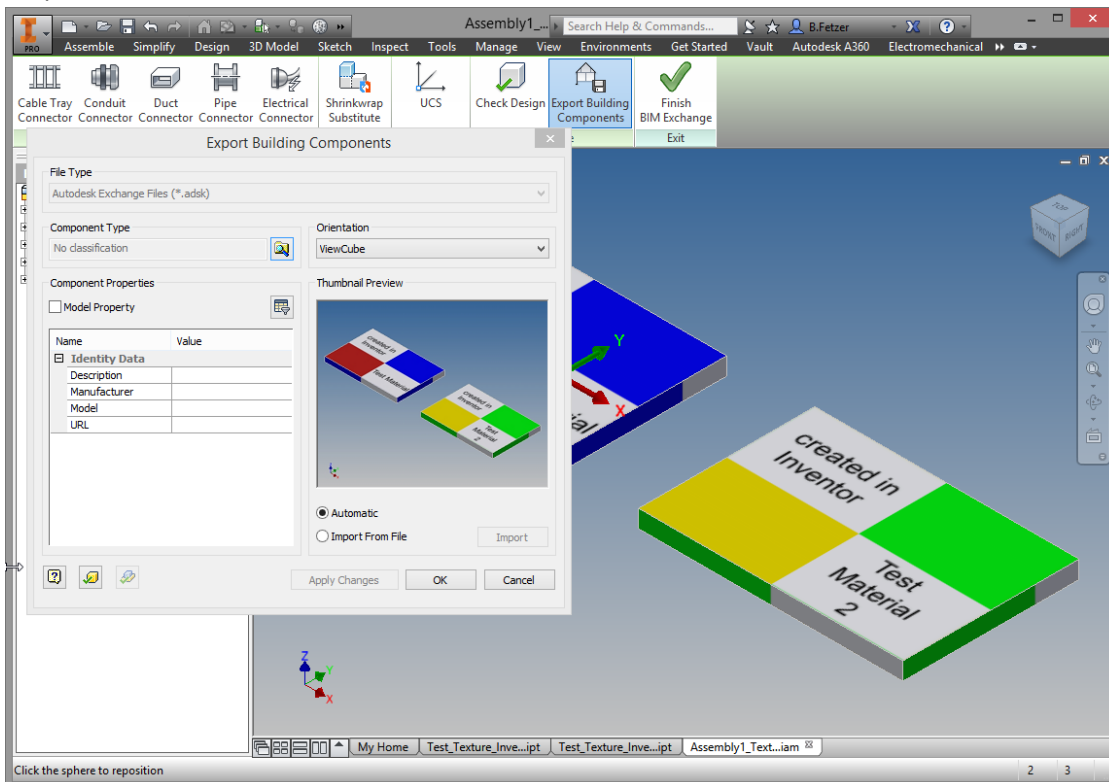
Creating of a new Assembly. Both Parts placed constrained.

Saved as *Assembly1\_Texture\_Inventor.iam*

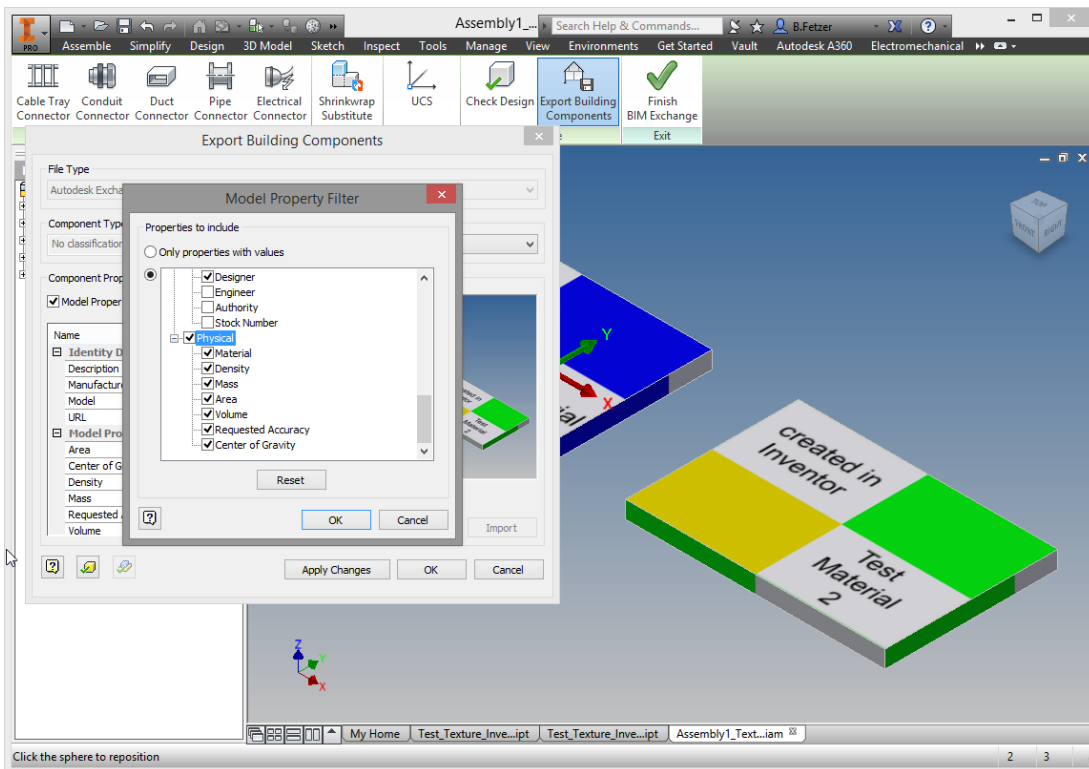


## 5.5 BIM EXCHANGE AS ADSK

Export out of Inventor as ADSK-File



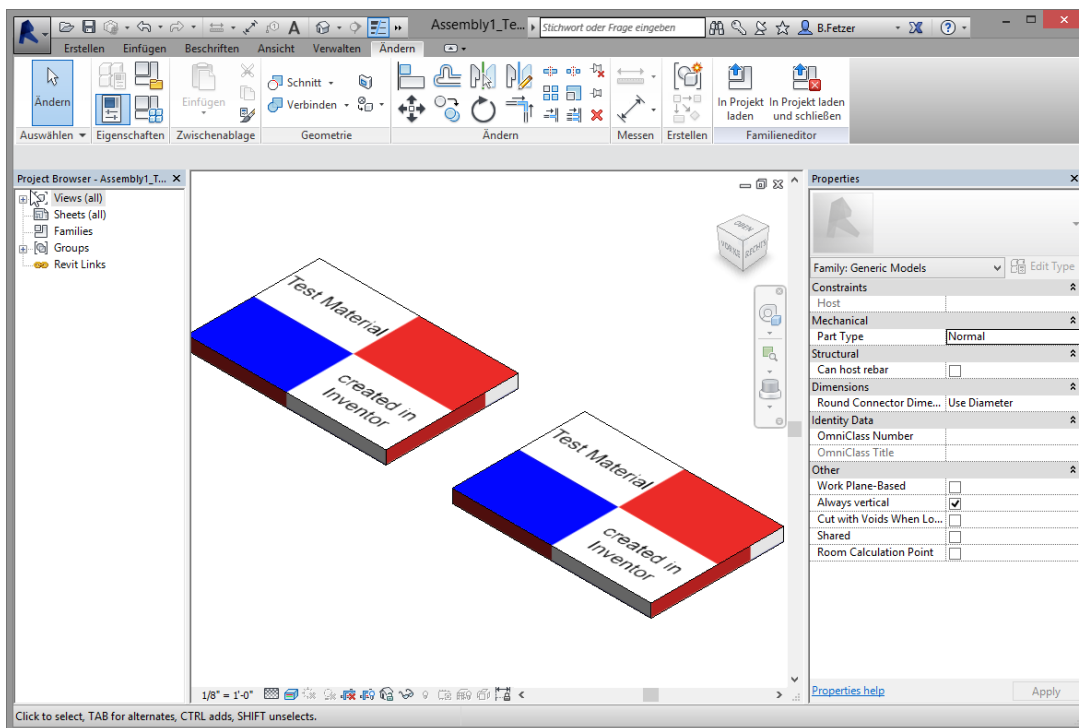
Saved as *Assembly1\_Texture\_Inventor\_without\_physic.adsk*



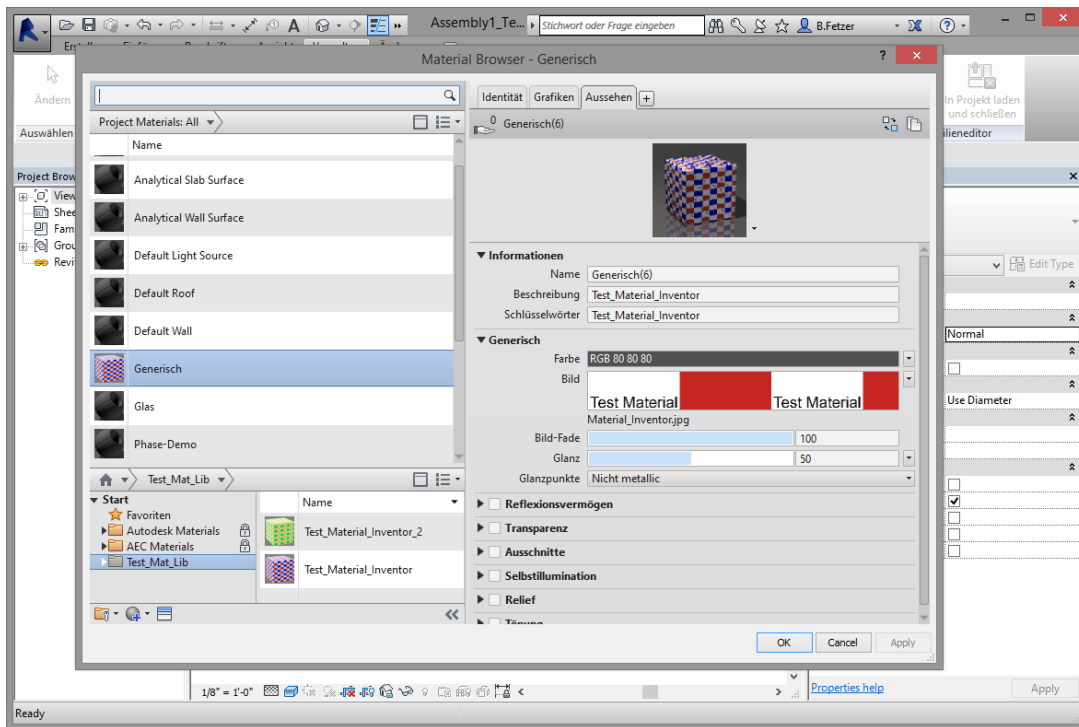
Saved as *Assembly1\_Texture\_Inventor\_with\_physic.adsk*

## 6 IMPORT IN REVIT (ADSK)

### 6.1 OPEN THE FILE *ASSEMBLY1\_TEXTURE\_INVENTOR\_WITH\_PHYSIC.ADSK*







- Only one Material is submitted
- Material is named “Generic”
- The Appearance is named “Generic”, but the Description and the Keywords are named as in Inventor
- It is not possible to rename the Material
- Physical Properties are not submitted

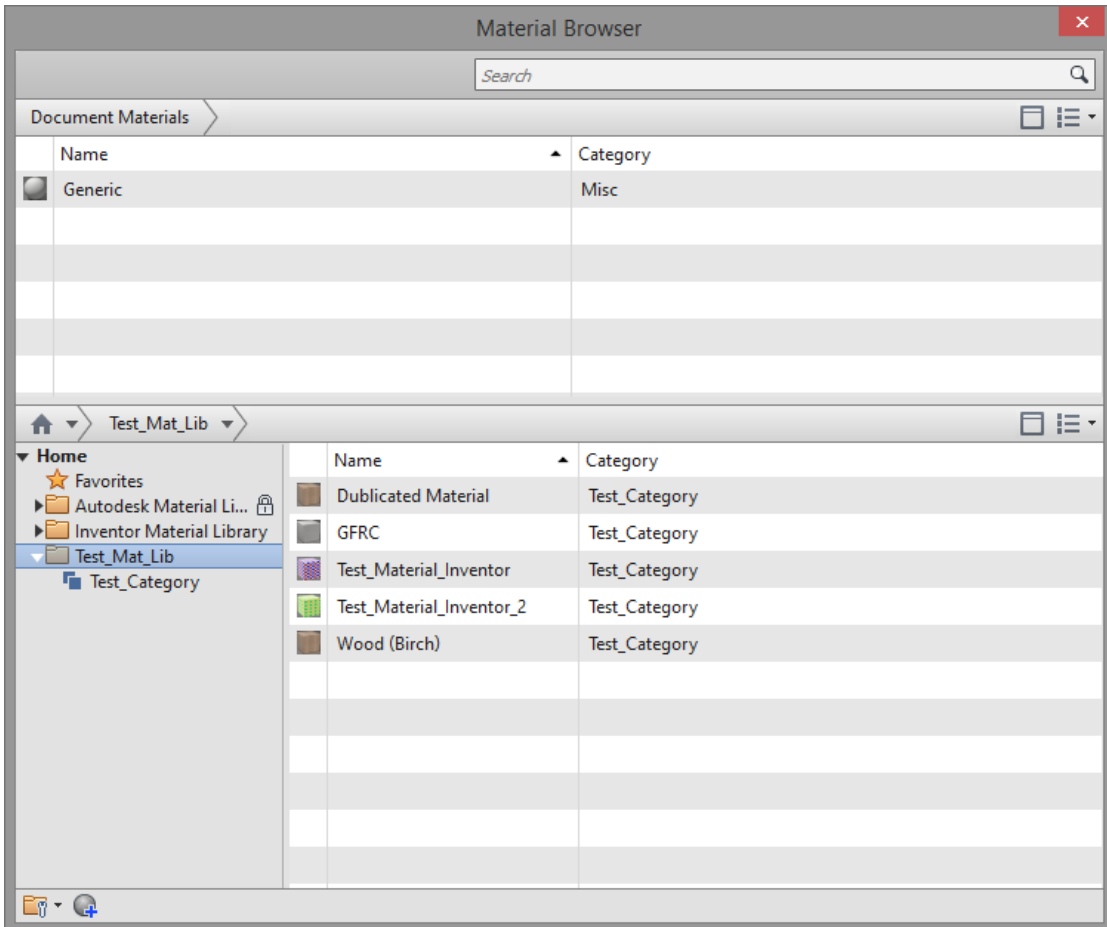
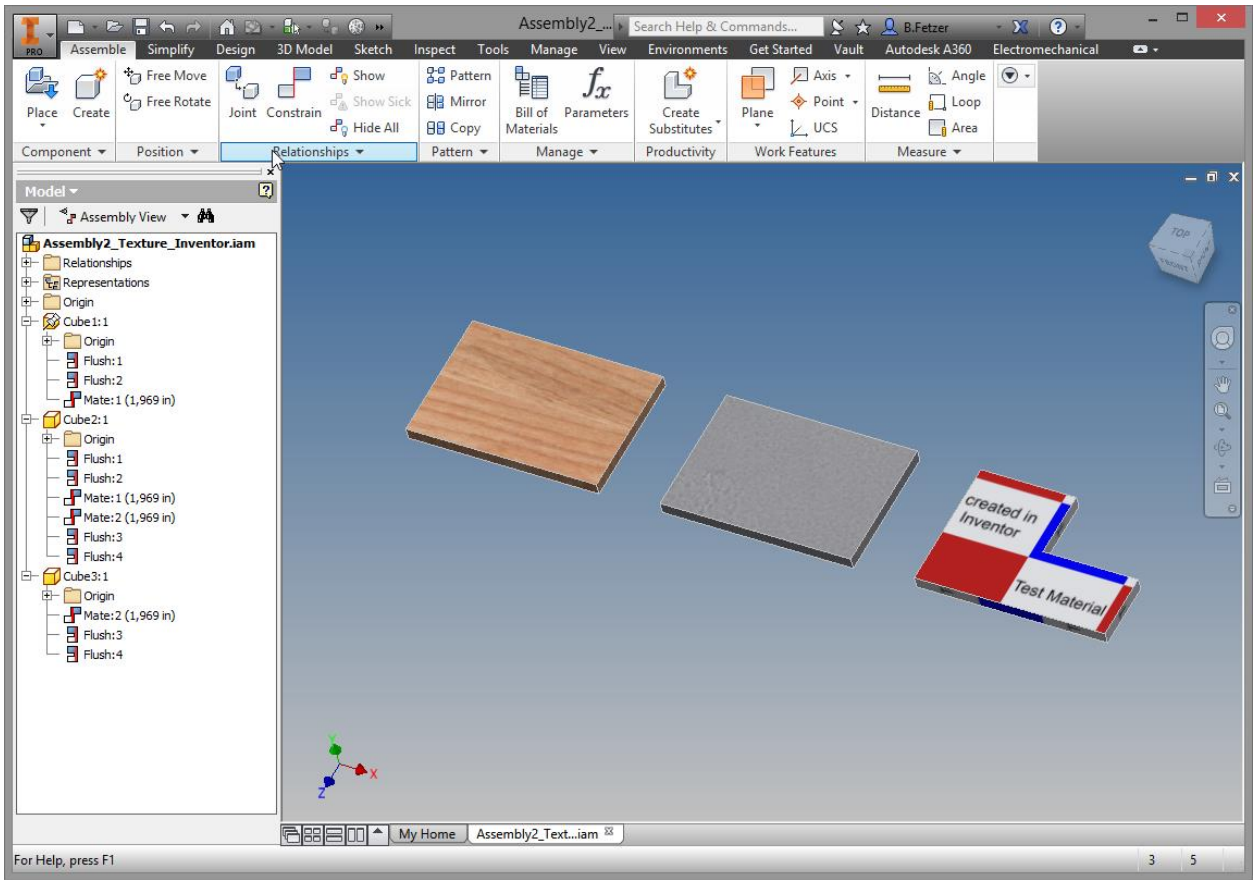
The File *Assembly1\_Texture\_Inventor\_without\_physic.adsk* is showing the same Result

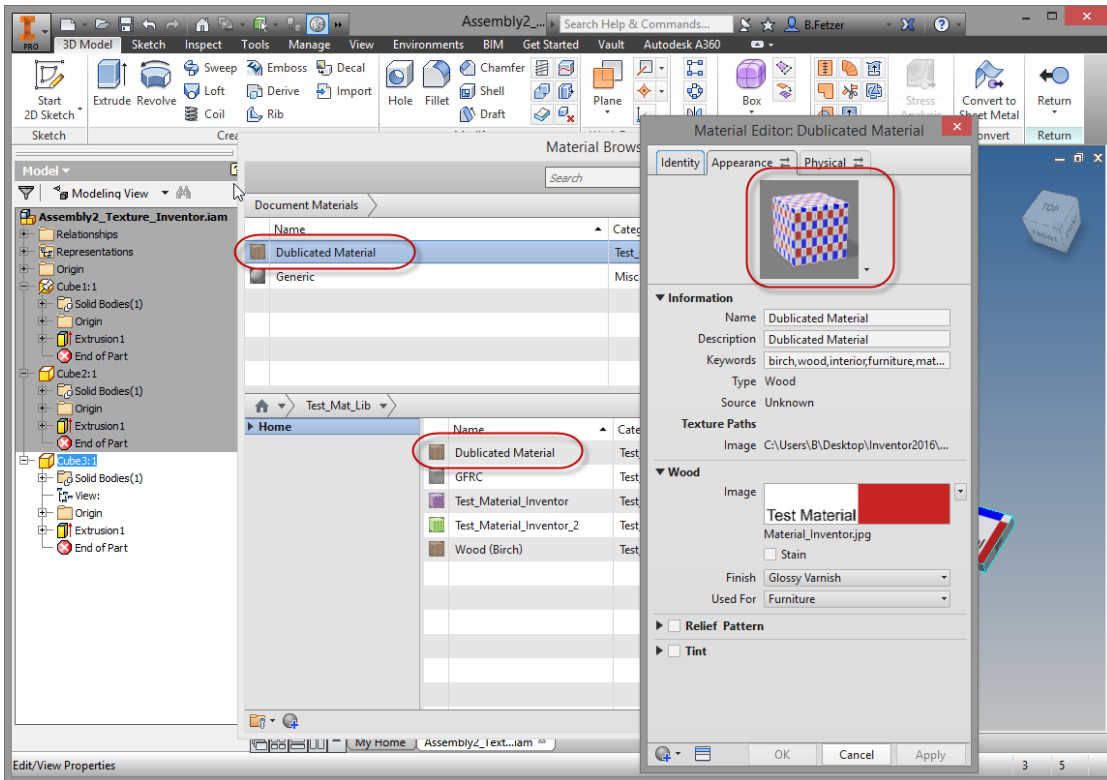
## 7 “BREADBOARD 3” INVENTOR 2016 ASSEMBLY AND INVENTOR-MATERIALS

### 7.1 CREATING A NEW ASSEMBLY

Creating a new Assembly. Creating of three new Cubes. Assign two existing Inventor-Materials (Birch and GFRC) to two of this Cubes. Duplicate the Material “Birch”, rename into “Duplicated Material”. Also rename Appearance. Assign Material Map “Material\_Inventor.jpg”. Assign this Material to the third Cube.

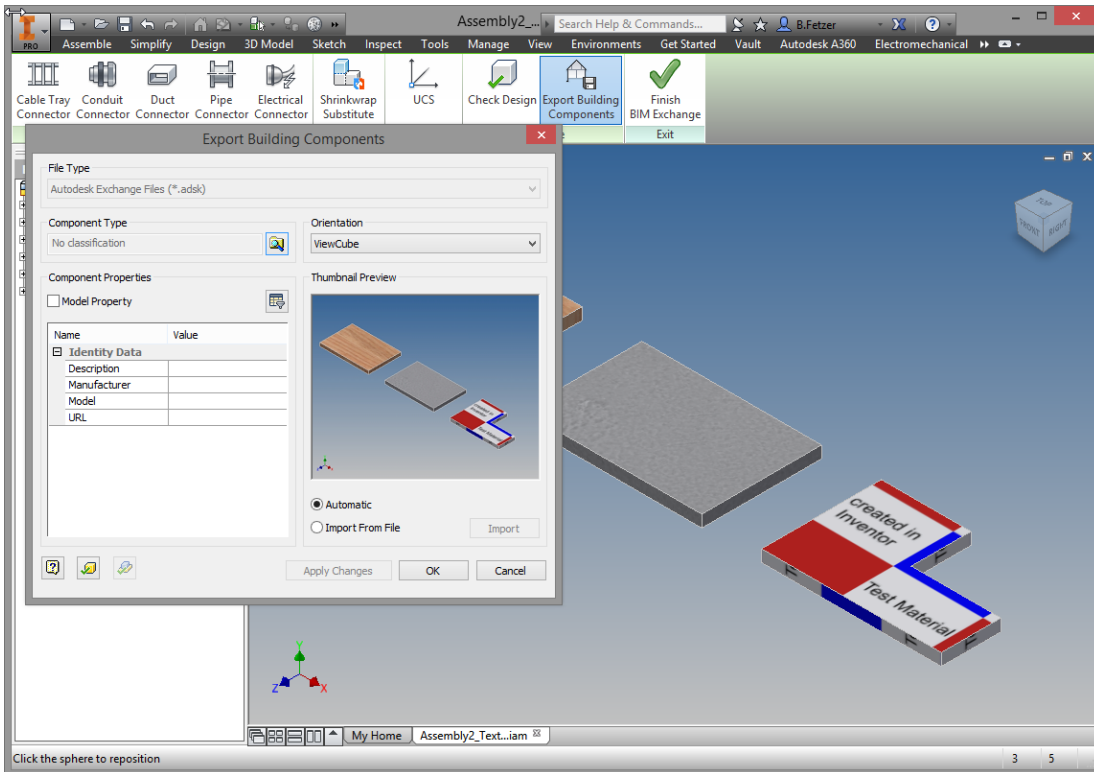
Save all Material into the Material-Library





The Thumbnail of the duplicated Material will not be updated !!

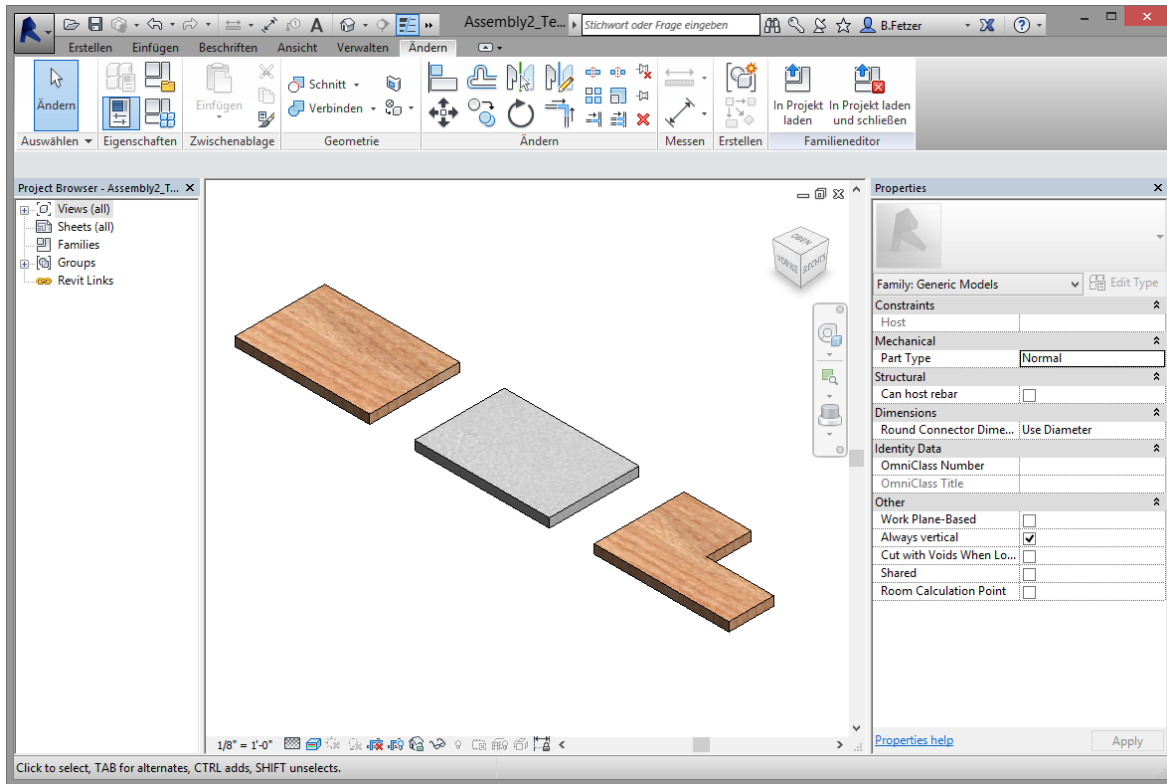
## 7.2 BIM EXCHANGE AS ADSK



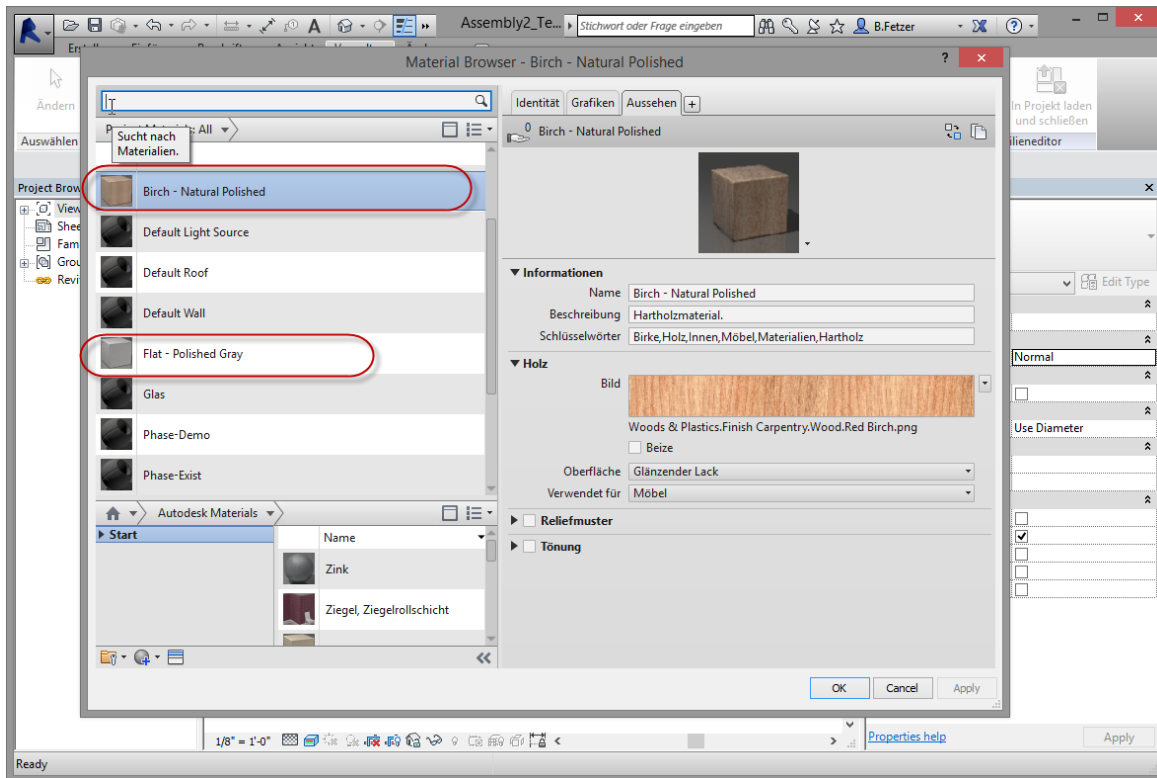
Saved as *Assembly2\_Texture\_Inventor.adsk*

# 8 IMPORT IN REVIT (ADSK)

## 8.1 OPEN THE FILE *ASSEMBLY2\_TEXTURE\_INVENTOR.ADSK* IN REVIT



The Appearance of Cube 1 and 3 are identically



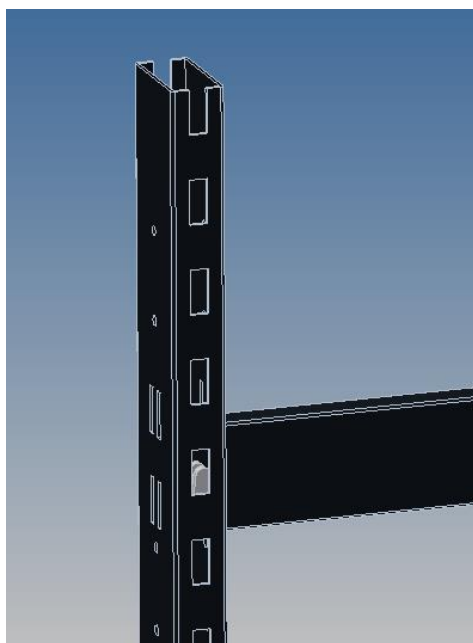
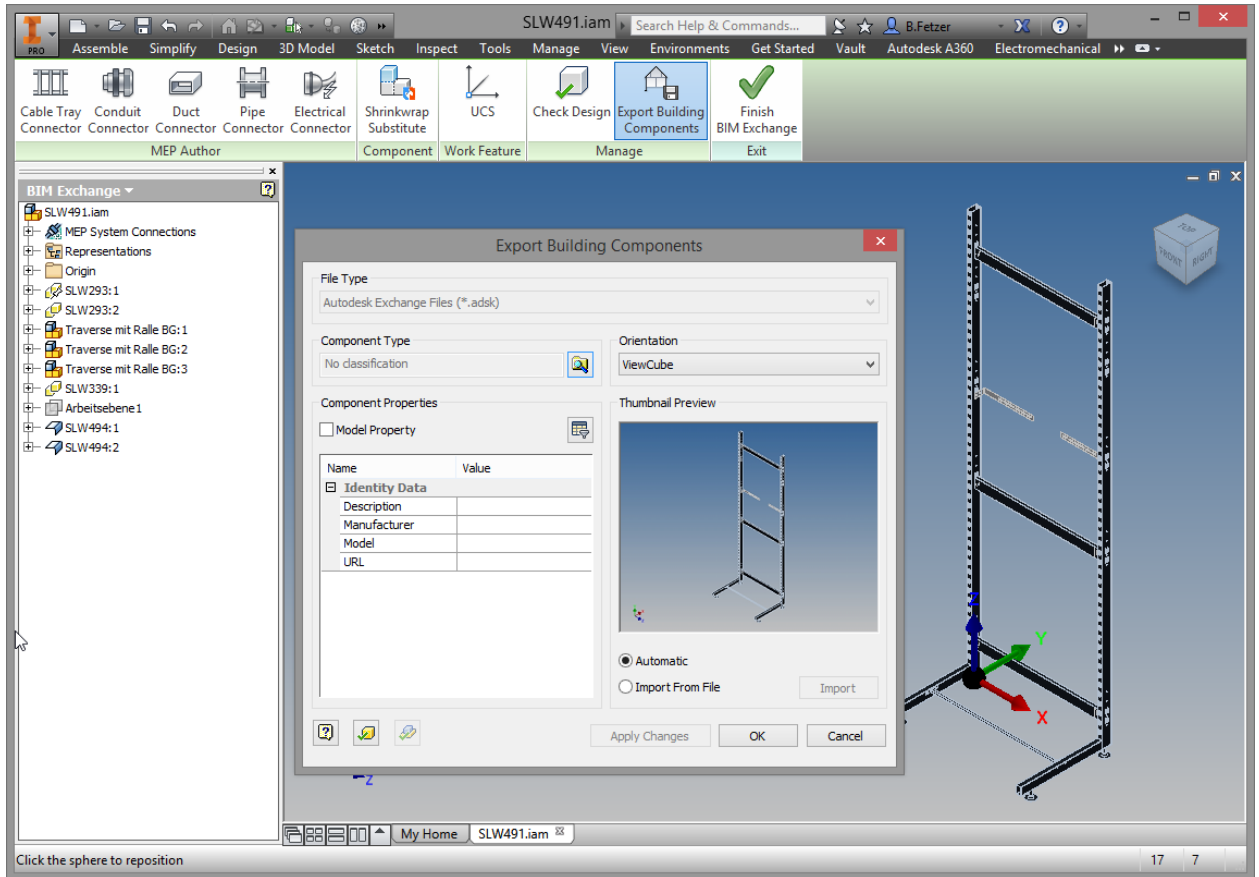
Materials are renamed ! Duplicated Material is missing !

# 9 DEFECTIVE PARTS (BIM EXCHANGE)

## 9.1 ASSEMBLY OF SHOPFITTING FURNITURE IN INVENTOR

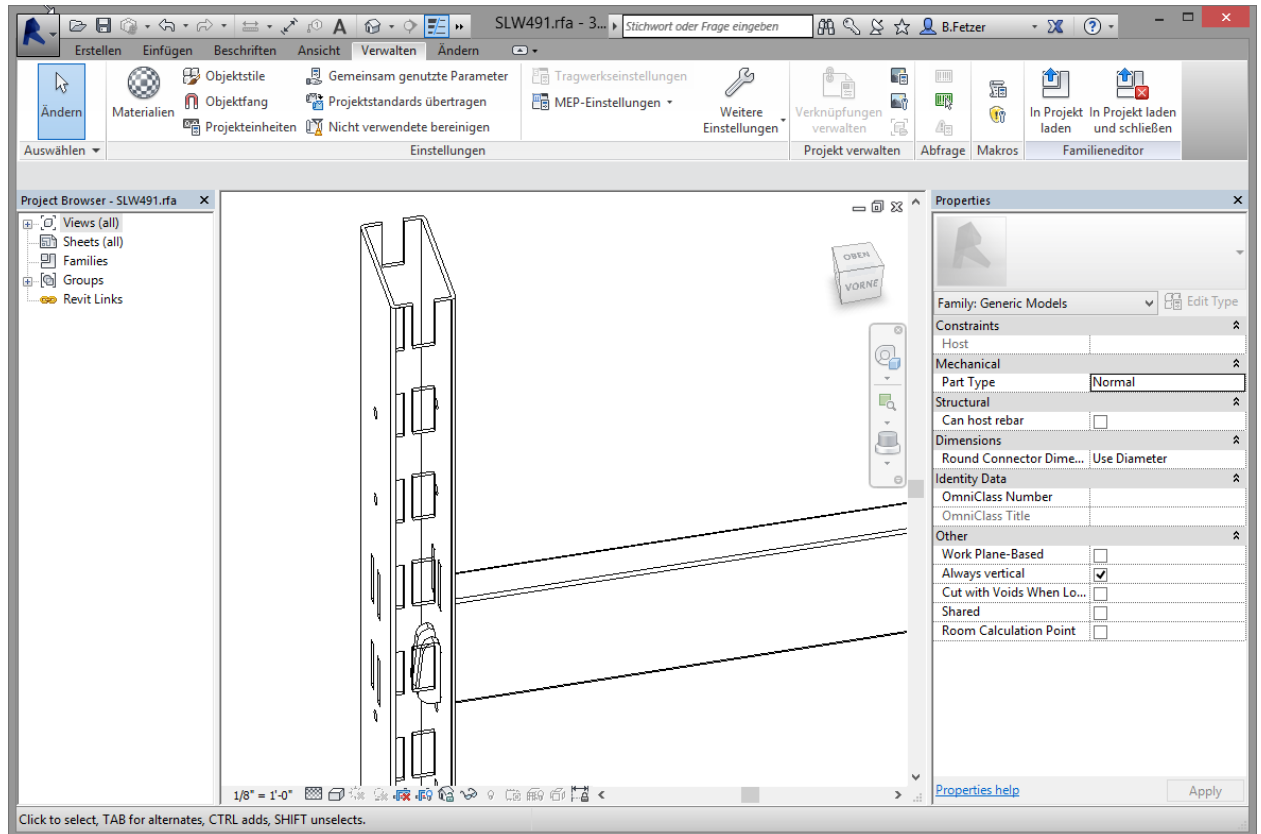
This is a Standard in our Work. We make the Construction Design with Inventor and would like to use this Parts in Revit

Export of this Assembly out of Inventor as ADSK



## 9.2 IMPORT IN REVIT (ADSK)

Open the File *SLW491.adsk* in Revit



Front Flank of the Tube is "broken".

There is no Surface.

This happens often by thin Objects like Tubes

# 10 INFORMATION ABOUT THE USED SOFTWARE AND HARDWARE

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## 10.1 SOFTWARE

Inventor 2016

Autodesk® Inventor® Professional 2016  
64-Bit Edition  
Build: 134, Release: 2016 RC - Date: Tue 02/24/2015

Revit 2016

AUTODESK®  
REVIT®

Build: 16.0.394.0  
20150114\_1515(x64)

## 10.2 HARDWARE

Lenovo ideapad U510,  
OS: WIN8, 64bit  
CU: i7-3537U-@2.00-2.50GHz  
RAM: 8 GB  
Festplatte: Samsung SSD 840, 400GB  
Grafikkarten: Intel HD Graphics4000 + Nvidia Geforce GT 720M (mit 2GB RAM)

# 11 CONTACT

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