­­­­

Lynx Rest Web Service API

Version 6.

December 21, 2021

Contents

[**How it works** 4](#_Toc90975812)

[**Environments** 4](#_Toc90975813)

[URLs 4](#_Toc90975814)

[**Change Log** 5](#_Toc90975815)

[**Authentication** 6](#_Toc90975816)

[**Tailored Solutions Search and Request- Coming January,2022** 7](#_Toc90975817)

[**Lead Time web service (Odata V4)** 7](#_Toc90975818)

[Operation 8](#_Toc90975819)

[https://apis.haworth.com/v1/Leadtime/GetLeadTime(RuleNumber='',MaterialNumber='',CatalogCode='TVBA-2TVB,TR-MC, UsageIndicator='',MaterialPricingGroup='',SalesDocumentType='ZOR',MaterialGroup3='',MaterialGroup4='',DeliveryPlant='5000',ShippingPoint='5000') 8](#_Toc90975820)

[Inputs 8](#_Toc90975821)

[Batch processing 10](#_Toc90975822)

[**List price web service (update 9/17)** 14](#_Toc90975823)

[Operation 14](#_Toc90975824)

[https://api.haworth.com/qa/api/pricelist/$batch (Remove the /qa if using in production ) 14](#_Toc90975825)

[**Order Status web service** 22](#_Toc90975826)

[Operation 22](#_Toc90975827)

[**Surface Collection(Color) web service** 25](#_Toc90975828)

[Operation 25](#_Toc90975829)

[https://api.haworth.com/api/surfacecollection/$metadata 25](#_Toc90975830)

[**Authentication: Appendix** 27](#_Toc90975831)

[Getting an Access Token 27](#_Toc90975832)

[What you need 27](#_Toc90975833)

[Using the Client Credentials Flow 28](#_Toc90975834)

[Getting an Access Token using the Client Credentials Flow: 28](#_Toc90975835)

[Using the Resource Owner Password Credentials Flow 28](#_Toc90975836)

[Getting an Access Token using the Resource Owner Password Credentials Flow: 29](#_Toc90975837)

[Using the Authorization Code Flow 29](#_Toc90975838)

[The Refresh Token Flow 31](#_Toc90975839)

[Other Authorization Flows 32](#_Toc90975840)

[Accessing an API 32](#_Toc90975841)

[Resources 32](#_Toc90975842)

# **How it works**

1. Oauth2 authentication is used for all REST based web services. You will need to request a client ID and client secret from the Haworth helpdesk if you do not have one already. Email to help.haworth.com, Subject: Request for client ID. If you are new to Haworth, the help desk will request additional information to ensure you have access to the proper data.
2. Tailored solutions Search should be used to find tailored solutions products that meet your search criteria. The CAD symbol URL will also be returned if the CAD symbol exists for that product. The URL can be used to retrieve the current 2d or 3D symbol. The user can use the symbol to validate that this tailored solution meets their requirements.
3. The Tailored Solutions Request can be used to request a new Tailored solution if none of the currently defined Tailored solutions products meet the users requirements. This request requires additional authorization to validate user and dealership. Therefore Bearer authorization and linkage to the authorization URL are required. The request has multiple components to allow you to submit a request, retrieve the request, change the request (prior to it being assigned to an engineer), add/change/delete up to 3 files to further explain what is being requested.
4. List price (Catalog code and Material/characteristics based List price) – Can be used to validate product specification as well as current list price (USD). Any specification errors will be returned along with user friendly error messages if there are any issues.
5. In process of implementing batch processing - Lead Time web service – Can be used to obtain current product lead time. At this point, the service is limited to material numbers only but the goal is to have this work for catalog codes as well.

# **Environments**

### URLs

~~QA – https://lynx-dealer-services-qa.haworth.com~~

~~Production –~~ [~~https://lynx-dealer-services.haworth.com~~](https://lynx-dealer-services.haworth.com)

Tailored solutions/List price:

QA-https://api.haworth.com/qa/api/tailoredsolutions/

Production- https://api.haworth.com/api/tailoredsolutions/

# **Change Log**

1. Initial Version
2. Added Authorization details in the appendix section. Changed e-commerce web service to list price web service in order to enable batch processing.
3. General update
4. Deprecated Tailored solutions and shortage API’s due to system changes
5. Added List price update, Marked Leadtime V2 webservice as obsolete.
6. Added Leadtime V4 webservice documentation

# **Authentication**

Oauth2 authentication is used for all the REST web services.

Please see the appendix for authorization details and different ways to access the REST services.

The details below were used in Postman to test the REST services internal to Haworth. You will need to change various parameters (i.e. callback URL ) for your environment.

For Client ID/Secret

Token type: Bearer

Grant type: Client Credentials

Access Token URL: <https://login.microsoftonline.com/72105ce1-edf3-4664-ae65-fd5a1e0a5487/oauth2/v2.0/token>

Client ID: Enter the client ID that was sent to you from Haworth

Client Secret: Enter the secret provided to you from Haworth

Scope: https://api.haworth.com/.default

Client Authentication: Send as Basic Auth header

Add the following to the Header keys

Key: X-CSRF-TOKEN Value: Fetch

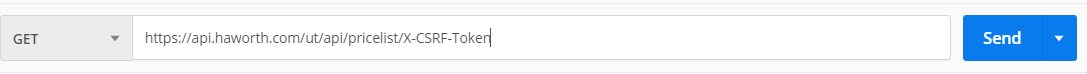
Key: Content-Type Value: multipart/mixed; boundary=batch

Key: Access-Control-Allow-Credentials Value: True

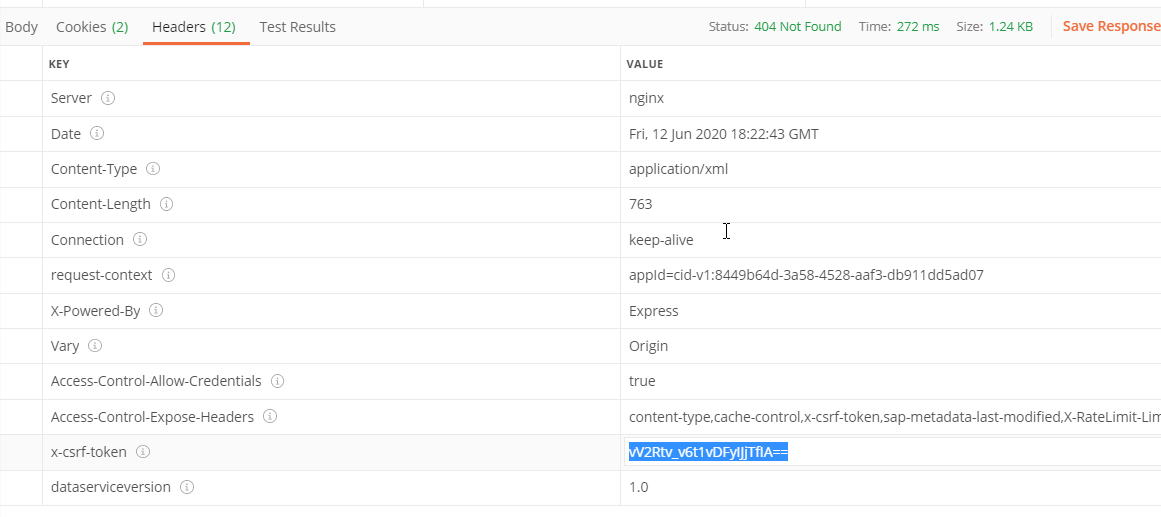
Under the Authorization tab:

Click “Get New Access Token” to retrieve the system generated Access Token then click Use Token

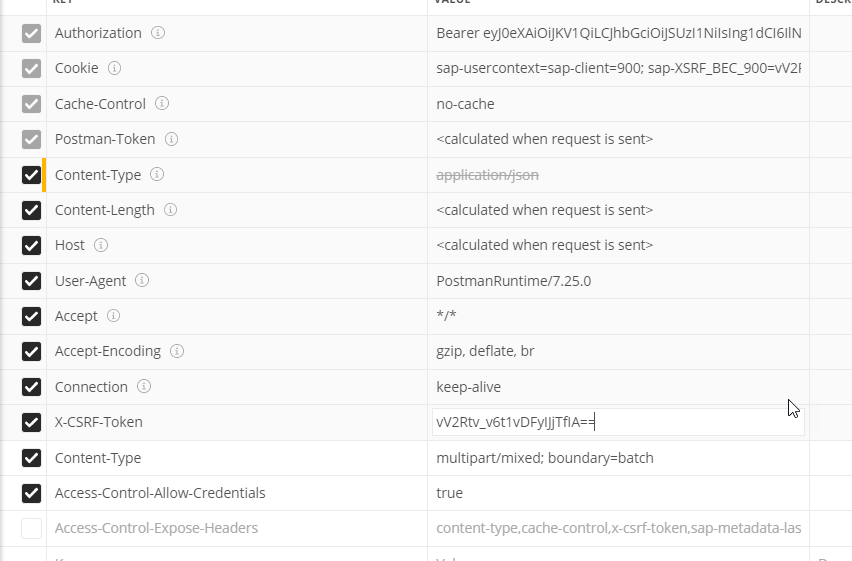
Create a GET request to retrieve the X-CSRF-Token, Request = https://api.haworth.com/qa/api/pricelist/$metadata for the QA environment



Retrieve the X-CSRF-Token from the Header section of the response:



And paste into the header of the request



You are now ready to start using/testing web services.

# **Tailored Solutions Search and Request- Coming January,2022**

# **Lead Time web service (Odata V4)**

This web service will return the lead time associated to a given catalog code or material number (the key data element in SAP). Product lead time is used by dealers to communicate to customer when they should expect to receive their product after the order is placed. The caveat is that actual lead time may vary due to order volume, non-standard finishes. This data should be used as a reference to help the dealer manage their project and enter appropriate delivery dates for the various sales order lines.

* Note: a subset of products will have additional lead time based on the color selected (i.e. HOP tables). Therefore, when possible include the color as well when requesting lead time; however, if the color is not provided then the API will return the base lead time.

This is an Odata V4 webservice and follows the Odata V4 standards.

Security is based on Client credentials (Id/Secret). Please contact Haworth if you do not already have this information or if you are having issues accessing the data using your existing client id/secret.

Generally, lead times are updated on a weekly basis (i.e. Fridays); therefore, it is possible to store/refresh the data for a given catalog code on a weekly basis. This would be done if there were performance issues associated with obtaining the data. Batch processing should be used if there are a large number of records required due to efficiency.

## Operation

Single material request –non-batch

### https://apis.haworth.com/v1/Leadtime/GetLeadTime(RuleNumber='',MaterialNumber='',CatalogCode='TVBA-2TVB,TR-MC, UsageIndicator='',MaterialPricingGroup='',SalesDocumentType='ZOR',MaterialGroup3='',MaterialGroup4='',DeliveryPlant='5000',ShippingPoint='5000')

### Inputs

The input for the service is:

UsageIndicator – *Leave blank (‘’) for most situations.* Additional lead time is typically added for Engineering samples, installation inspection(pre-install) or quality checks. The values for this field are:

No specified usage

CC Critical Care

ES Engineering Sample

II Install Inspection

M Mockup

MP Mockup Pre-Install

P Priority

QI Quality Inspection

WM Well Match

MaterialPricingGroup- *The default value for this field is ‘01’* – Normal orders. This value will be used if it is not provided.

The value set for this data field is:

01 Normal

02 RUSH10

06 QUICK SHIP

07 HAWORTH NOW

SalesDocumentType – *The default value for this field is ZOR* – Normal orders. None of the other values should be used in the web service call

DeliveryPlant- *The default value for this field is 5000*- Haworth Distribution, located in Holland,MI. None of the other values should be used in the web service call

ShippingPoint -*The default value for this field is 5000*- Haworth Distribution, located in Holland,MI. None of the other values should be used in the web service call

MaterialGroup3 – Leave blank, This is the product name. This value will be assigned based on the catalog code or material number.

MaterialGroup4 – Leave blank, This is the major product category. This value will be assigned based on the catalog code or material number.

MaterialNumber- the SAP orderable material number. This is a 7 digit number and can be entered with/without the dash. Enter either the material number or the catalog code but not both in order to avoid conflicts in data for a given URL call. Batch mode does accept both.

CatalogCode – The catalog code can be entered with or without surfaces; however, there are situations where the color selected may increase the lead time therefore it is better to include the color(s) with the catalog code submission.

Response:

{

    "@odata.context": "$metadata#LeadTimeRequestSet",

    "@odata.metadataEtag": "W/\"20211128010026\"",

    "value": [

        {

            "RuleNumber": "NORMAL",

            "MaterialNumber": "112-1453",

            "CatalogCode": "VZGC-0000",

            "UsageIndicator": "",

            "MaterialPriceGroup": "01",

            "BasicLeadTime": 0,

            "SalesDocumentType": "ZOR",

            "SalesDocumentLeadTime": 0,

            "MaterialGroup3": "153",

            "MaterialGroup3Description": "Compose ®",

            "MaterialGroup3LeadTime": 10,

            "MaterialGroup4": "104",

            "MaterialGroup4Description": "Systems",

            "MaterialGroup4LeadTime": 19,

            "RuleMaterialNumber": "",

            "MaterialOffset": 0,

            "DeliveryPlant": "3005",

            "DeliveryPlantLeadTime": 0,

            "ShippingPoint": "3005",

            "ShippingPointLeadTime": 0,

            "BufferLeadTime": 1,

            "CharacteristicsLeadTime": 0,

            "TotalLeadTime": 30

        }

    ]

}

The response provides the ability for Haworth members to understand what is driving the lead time calculations. From a user perspective, they only need to see the TotalLeadTime value.

## Batch processing

Batch processing enables the ability to submit multiple catalog codes or materials in a single request. This makes both the request and the response more efficient.

Batch processing will utilize the POST method; however, the internal calls are GET statements.

For the batch method, you will need to obtain the X-CSRF-Token. (see above notes on how to obtain the X-CSRF-Token)

The typical batch request is shown below:

URL: <https://apis.haworth.com/v1/Leadtime/$batch>

**Request:**

**Header details:**

Content-Type multipart/mixed; boundary=batch

**Body:**

--batch

Content-Type: application/http

Content-Transfer-Encoding: binary

GET GetLeadTime(RuleNumber='',MaterialNumber='',CatalogCode='TVBA-2TVB,TR-MC',UsageIndicator='',MaterialPricingGroup='',SalesDocumentType='ZOR',MaterialGroup3='',MaterialGroup4='',DeliveryPlant='5000',ShippingPoint='5000') HTTP/1.1

Accept: application/json

--batch

Content-Type: application/http

Content-Transfer-Encoding: binary

GET GetLeadTime(RuleNumber='',MaterialNumber='',CatalogCode='TS00-4HBJ,OH-AA,HP-AA,TR-MC',UsageIndicator='',MaterialPricingGroup='',SalesDocumentType='ZOR',MaterialGroup3='',MaterialGroup4='',DeliveryPlant='500',ShippingPoint='5000') HTTP/1.1

Accept: application/json

--batch

Content-Type: application/http

Content-Transfer-Encoding: binary

GET GetLeadTime(RuleNumber='',MaterialNumber='112-1453',CatalogCode='',UsageIndicator='',MaterialPricingGroup='',SalesDocumentType='ZOR',MaterialGroup3='',MaterialGroup4='',DeliveryPlant='5000',ShippingPoint='5000') HTTP/1.1

Accept: application/json

--batch

Content-Type: application/http

Content-Transfer-Encoding: binary

POST LeadTimeRequestSet HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"MaterialNumber" : "121-0758",

"SalesDocumentType" : "ZOR",

"DeliveryPlant" : "5000",

"ShippingPoint" : "5000",

"\_Characteristicset" : [

{

"CharacteristicsName" : "CH\_CSG\_BASE\_FOOT",

"CharacteristicsValue" : "GLD"

},

{

"CharacteristicsName" : "CH\_CSG\_BASE\_STYLE",

"CharacteristicsValue" : "XBASE"

},

{

"CharacteristicsName" : "CH\_WKT\_COMPON\_DPT\_1A",

"CharacteristicsValue" : "1066.8 mm"

},

{

"CharacteristicsName" : "CH\_CSG\_FURN\_HGT\_1A",

"CharacteristicsValue" : "736.6 mm"

},

{

"CharacteristicsName" : "CH\_CSG\_BASE\_FOOT",

"CharacteristicsValue" : "GLD"

},

{

"CharacteristicsName" : "CH\_WKT\_CORE\_TYPE",

"CharacteristicsValue" : "STD"

},

{

"CharacteristicsName" : "CH\_WKT\_SURF\_MATL\_1A",

"CharacteristicsValue" : "LAM"

},

{

"CharacteristicsName" : "CH\_WKT\_TRM\_TYPE\_EDGE",

"CharacteristicsValue" : "EB3"

},

{

"CharacteristicsName" : "CH\_CSG\_FUNC",

"CharacteristicsValue" : "FIXED"

},

{

"CharacteristicsName" : "CH\_WKT\_SURF\_COL\_1A",

"CharacteristicsValue" : "H\_AE"

},

{

"CharacteristicsName" : "CH\_WKT\_TRM\_COL\_EDGE",

"CharacteristicsValue" : "HP\_AE"

},

{

"CharacteristicsName" : "CH\_WKT\_TRM\_COL\_EDGE\_B",

"CharacteristicsValue" : "NO\_COL"

},

{

"CharacteristicsName" : "CH\_WKT\_BASE\_COL\_1A",

"CharacteristicsValue" : "TR\_LE"

},

{

"CharacteristicsName" : "CH\_WKT\_BASE\_COL\_1B",

"CharacteristicsValue" : "NO\_COL"

}

]

}

--batch--

Response:

--81E4DD5892D48CBE711CC17D6D766A1E0

Content-Type: application/http

Content-Length: 858

content-transfer-encoding: binary

HTTP/1.1 200 OK

Content-Type: application/json;odata.metadata=minimal

Content-Length: 691

odata-version: 4.0

cache-control: no-cache, no-store, must-revalidate

{"@odata.context":"$metadata#LeadTimeRequestSet","@odata.metadataEtag":"W/\"20211128010026\"","value":[{"RuleNumber":"NORMAL","MaterialNumber":"122-7891","CatalogCode":"TVBA-2TVB","UsageIndicator":"","MaterialPriceGroup":"01","BasicLeadTime":0,"SalesDocumentType":"ZOR","SalesDocumentLeadTime":0,"MaterialGroup3":"432","MaterialGroup3Description":"Hop™","MaterialGroup3LeadTime":-5,"MaterialGroup4":"104","MaterialGroup4Description":"Systems","MaterialGroup4LeadTime":19,"RuleMaterialNumber":"122-7891","MaterialOffset":-10,"DeliveryPlant":"5000","DeliveryPlantLeadTime":0,"ShippingPoint":"5000","ShippingPointLeadTime":0,"BufferLeadTime":1,"CharacteristicsLeadTime":0,"TotalLeadTime":5}]}

--81E4DD5892D48CBE711CC17D6D766A1E0

Content-Type: application/http

Content-Length: 272

content-transfer-encoding: binary

HTTP/1.1 200 OK

Content-Type: application/json;odata.metadata=minimal

Content-Length: 105

odata-version: 4.0

cache-control: no-cache, no-store, must-revalidate

{"@odata.context":"$metadata#LeadTimeRequestSet","@odata.metadataEtag":"W/\"20211128010026\"","value":[]}

--81E4DD5892D48CBE711CC17D6D766A1E0

Content-Type: application/http

Content-Length: 853

content-transfer-encoding: binary

HTTP/1.1 200 OK

Content-Type: application/json;odata.metadata=minimal

Content-Length: 686

odata-version: 4.0

cache-control: no-cache, no-store, must-revalidate

{"@odata.context":"$metadata#LeadTimeRequestSet","@odata.metadataEtag":"W/\"20211128010026\"","value":[{"RuleNumber":"NORMAL","MaterialNumber":"112-1453","CatalogCode":"VZGC-0000","UsageIndicator":"","MaterialPriceGroup":"01","BasicLeadTime":0,"SalesDocumentType":"ZOR","SalesDocumentLeadTime":0,"MaterialGroup3":"153","MaterialGroup3Description":"Compose ®","MaterialGroup3LeadTime":10,"MaterialGroup4":"104","MaterialGroup4Description":"Systems","MaterialGroup4LeadTime":19,"RuleMaterialNumber":"","MaterialOffset":0,"DeliveryPlant":"5000","DeliveryPlantLeadTime":0,"ShippingPoint":"5000","ShippingPointLeadTime":0,"BufferLeadTime":1,"CharacteristicsLeadTime":0,"TotalLeadTime":30}]}

--81E4DD5892D48CBE711CC17D6D766A1E0

Content-Type: application/http

Content-Length: 923

content-transfer-encoding: binary

HTTP/1.1 201 Created

Content-Type: application/json;odata.metadata=minimal

Content-Length: 711

location: LeadTimeRequestSet('NORMAL')

odata-version: 4.0

cache-control: no-cache, no-store, must-revalidate

{"@odata.context":"$metadata#LeadTimeRequestSet/$entity","@odata.metadataEtag":"W/\"20211128010026\"","RuleNumber":"NORMAL","MaterialNumber":"121-0758","CatalogCode":"TARN-3030-LJSNDN4A","UsageIndicator":"","MaterialPriceGroup":"01","BasicLeadTime":0,"SalesDocumentType":"ZOR","SalesDocumentLeadTime":0,"MaterialGroup3":"162","MaterialGroup3Description":"Planes®","MaterialGroup3LeadTime":0,"MaterialGroup4":"107","MaterialGroup4Description":"Tables","MaterialGroup4LeadTime":19,"RuleMaterialNumber":"","MaterialOffset":0,"DeliveryPlant":"5000","DeliveryPlantLeadTime":0,"ShippingPoint":"5000","ShippingPointLeadTime":0,"BufferLeadTime":1,"CharacteristicsLeadTime":0,"TotalLeadTime":20,"\_Characteristicset":[]}

--81E4DD5892D48CBE711CC17D6D766A1E0--

# **List price web service (update 9/17)**

This web service works for both catalog codes and materials with characteristic definition. The web service will return the list price (USD) if the item has been fully specified.

(9/17) Webservice has been updated to provide the product description as well as the Superclass (MG1), Product Type (MG2), Product Brand (MG3), Product group (MG4) and Installation Sequence (MG5) values. The response will contain the following:

<d:MaterialGroup1>BC0</d:MaterialGroup1>

    <d:MaterialGroup1Description>Compose</d:MaterialGroup1Description>

    <d:MaterialGroup2>254</d:MaterialGroup2>

    <d:MaterialGroup2Description>Sct-Individual Tile</d:MaterialGroup2Description>

    <d:MaterialGroup3>153</d:MaterialGroup3>

    <d:MaterialGroup3Description>Compose ®</d:MaterialGroup3Description>

    <d:MaterialGroup4>104</d:MaterialGroup4>

    <d:MaterialGroup4Description>Systems</d:MaterialGroup4Description>

    <d:MaterialGroup5>260</d:MaterialGroup5>

    <d:MaterialGroup5Description>Pnl Pds,Tiles,Trim,OS,Task Lghtng,TB</d:MaterialGroup5Description>

    <d:CatalogCodeDescription>Compose,Single Tile,40In.HX72In.W,Fabric/Tackable,Std Core,No Tech</d:CatalogCodeDescription>

## Operation

### <https://api.haworth.com/qa/api/pricelist/$batch> (Remove the /qa if using in production )

Request

This request is a POST request.

Both catalog codes and materials/characteristics can be submitted in the same request.

Catalog codes:

These must be fully specified catalog codes or you will get errors in the response.

(9/17) To obtain the description and MG values include the following in your POST call “MaterialGroup”:”X” See highlights in Red.

Example: (JSON)

--batch

Content-Type: multipart/mixed; boundary=changeset

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

POST ProductConfigurationSet HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Catalogcode":"TARN-4242-LJSNDN4A,H-KM,HP-KM,TR-K",

“MaterialGroup”:”X”

}

--changeset--

--batch--

Response: (JSON)

--10D42CD8F53521C77736FB0A71B4B4E10

Content-Type: multipart/mixed; boundary=10D42CD8F53521C77736FB0A71B4B4E11

Content-Length: 1697

--10D42CD8F53521C77736FB0A71B4B4E11

Content-Type: application/http

Content-Length: 1528

content-transfer-encoding: binary

HTTP/1.1 201 Created

Content-Type: application/json

Content-Length: 1280

location: https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHuqrm5om2sI\_GC')

dataserviceversion: 2.0

{"d":{"\_\_metadata":{"id":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHuqrm5om2sI\_GC')","uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHuqrm5om2sI\_GC')","type":"ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV.ProductConfiguration"},"CatalogCodeDesc":"","CharSetIdDef":"","Configid":"AFBWgl0rHuqrm5om2sI\_GC","DealerDiscountAmount":"0.000000000","Customer":"","PreferredGPAmount":"0.000000000","DealerDiscountPercentage":"0.00","Incomplete":"false","MatchedCatalogCode":"Not Requested","PreferredGPPercentage":"0.00","Owner":"API\_EMANAGE","Inconsistent":"false","Project":"","SIF":"Not Requested","ConstraintViolated":"false","OfdaXml":"Not Requested","Catalogcode":"TARN-4242-LJSNDN4A,H-KM,HP-KM,TR-K","Visual":"false","Material":"121-0758","Pricedate":"\/Date(1591987499331)\/","Country":"USA","Currency":"USD","Price":"1265.450000000","Plant":"","Created":"\/Date(1591987499331)\/","Language":"EN","Configurable":"YES","MessageType":"","Message":"","Characteristics":{"\_\_deferred":{"uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHuqrm5om2sI\_GC')/Characteristics"}}}}

--10D42CD8F53521C77736FB0A71B4B4E11--

--10D42CD8F53521C77736FB0A71B4B4E10—

This is a valid price if there aren’t any errors as noted by the fact that this item is not Incomplete, Inconsistent and doesn’t have configuration errors. The highlighted item is the LIST PRICE. (Note, this is current list price since the price date was not specified in the request. ).

Material code specification:

Materials and characteristics/value combinations can also be submitted in order to retrieve the list price for that specific combination.

The required format uses a combination of POST and PATCH requests.

The configid is a unique identifier for this request that you create within your system. The configid links together the various elements of the request.

Example:

--batch

Content-Type: multipart/mixed; boundary=changeset

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

POST ProductConfigurationSet HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

  "Configid":"dTOhzv36qEar17wqVNb3qg",

  "Material":"121-0758",

“MaterialGroup”:”X”

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_CSG\_BASE\_FOOT') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_CSG\_BASE\_FOOT",

"Currentchoice":"GLD"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_CSG\_BASE\_STYLE') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

  "Configid":"dTOhzv36qEar17wqVNb3qg",

  "Characteristicid":"CH\_CSG\_BASE\_STYLE",

  "Currentchoice":"XBASE"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_COMPON\_DPT\_1A') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_COMPON\_DPT\_1A",

"Currentchoice":"1066.8 mm"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_CSG\_FURN\_HGT\_1A') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_CSG\_FURN\_HGT\_1A",

"Currentchoice":"736.6 mm"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_CORE\_TYPE') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_CORE\_TYPE",

"Currentchoice":"STD"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_SURF\_MATL\_1A') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_SURF\_MATL\_1A",

"Currentchoice":"LAM"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_TRM\_TYPE\_EDGE') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_TRM\_TYPE\_EDGE",

"Currentchoice":"EB3"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_CSG\_FUNC') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_CSG\_FUNC",

"Currentchoice":"FIXED"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_SURF\_COL\_1A') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_SURF\_COL\_1A",

"Currentchoice":"H\_AE"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_TRM\_COL\_EDGE') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_TRM\_COL\_EDGE",

"Currentchoice":"HP\_AE"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_TRM\_COL\_EDGE\_B') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_TRM\_COL\_EDGE\_B",

"Currentchoice":"NO\_COL"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_BASE\_COL\_1A') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_BASE\_COL\_1A",

"Currentchoice":"TR\_LE"

}

--changeset

Content-Type: application/http

Content-Transfer-Encoding: binary

PATCH ProductCharacteristicSet(Configid='dTOhzv36qEar17wqVNb3qg',Characteristicid='CH\_WKT\_BASE\_COL\_1B') HTTP/1.1

Accept: application/json

Content-Type: application/json; charset=utf-8

Content-Length: 5000

{

"Configid":"dTOhzv36qEar17wqVNb3qg",

"Characteristicid":"CH\_WKT\_BASE\_COL\_1B",

"Currentchoice":"NO\_COL"

}

--changeset--

--batch--

Response:

{"d":{"\_\_metadata":{"id":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('dTOhzv36qEar17wqVNb3qg')","uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('dTOhzv36qEar17wqVNb3qg')","type":"ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV.ProductConfiguration"},"CatalogCodeDesc":"","CharSetIdDef":"","Configid":"dTOhzv36qEar17wqVNb3qg","DealerDiscountAmount":"0.000000000","Customer":"","PreferredGPAmount":"0.000000000","DealerDiscountPercentage":"0.00","Incomplete":"false","MatchedCatalogCode":"Not Requested","PreferredGPPercentage":"0.00","Owner":"API\_EMANAGE","Inconsistent":"false","Project":"","SIF":"Not Requested","ConstraintViolated":"false","OfdaXml":"Not Requested","Catalogcode":"","Visual":"false","Material":"121-0758","Pricedate":"\/Date(1591987810235)\/","Country":"USA","Currency":"USD","Price":"1101.430000000","Plant":"","Created":"\/Date(1591987810235)\/","Language":"EN","Configurable":"YES","MessageType":"","Message":"","Characteristics":{"\_\_deferred":{"uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('dTOhzv36qEar17wqVNb3qg')/Characteristics"}}}}

--289505B61CCA9F6F64E47C99BA941FFA1

Error message example: Bad catalog code - TARN-4242-LJSNDN4A2

sap-message: {"code":"ZGM\_OLC\_MCL/008","message":"Product specification is incomplete or inconsistent","severity":"error","target":"","details":[{"code":"ZGL\_MCL/054","message":"Catalog code TARN-4242-LJSNDN4A2 does not exist","target":"","severity":"error"}]}

{"d":{"\_\_metadata":{"id":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHtqrm9CcPCxAW2')","uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHtqrm9CcPCxAW2')","type":"ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV.ProductConfiguration"},"CatalogCodeDesc":"","CharSetIdDef":"","Configid":"AFBWgl0rHtqrm9CcPCxAW2","DealerDiscountAmount":"0.000000000","Customer":"","PreferredGPAmount":"0.000000000","DealerDiscountPercentage":"0.00","Incomplete":"","MatchedCatalogCode":"","PreferredGPPercentage":"0.00","Owner":"API\_EMANAGE","Inconsistent":"","Project":"","SIF":"","ConstraintViolated":"","OfdaXml":"","Catalogcode":"TARN-4242-LJSNDN4A2,H-KM,HP-KM,TR-K","Visual":"false","Material":"","Pricedate":"\/Date(1591988230620)\/","Country":"USA","Currency":"USD","Price":"0.000000000","Plant":"","Created":"\/Date(1591988230620)\/","Language":"EN","Configurable":"YES","MessageType":"ERROR","Message":"\nCatalog code TARN-4242-LJSNDN4A2 does not exist\nProduct specification is incomplete or inconsistent","Characteristics":{"\_\_deferred":{"uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('AFBWgl0rHtqrm9CcPCxAW2')/Characteristics"}}}}

Error message example (incorrect color). Material example TR\_LE changed to TR\_l2

Response:

sap-message: {"code":"ZGM\_OLC\_MCL/008","message":"Product specification is incomplete or inconsistent","severity":"error","target":"","details":[{"code":"ZGM\_FINISH/057","message":"Color code TR\_L2(TRIM) is not suitable for the product surface specified","target":"","severity":"error"}]}

{"d":{"\_\_metadata":{"id":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('dTOhzv36qEar17wqVNb3qg')","uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('dTOhzv36qEar17wqVNb3qg')","type":"ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV.ProductConfiguration"},"CatalogCodeDesc":"","CharSetIdDef":"","Configid":"dTOhzv36qEar17wqVNb3qg","DealerDiscountAmount":"0.000000000","Customer":"","PreferredGPAmount":"0.000000000","DealerDiscountPercentage":"0.00","Incomplete":"false","MatchedCatalogCode":"Not Requested","PreferredGPPercentage":"0.00","Owner":"API\_EMANAGE","Inconsistent":"false","Project":"","SIF":"Not Requested","ConstraintViolated":"true","OfdaXml":"Not Requested","Catalogcode":"","Visual":"false","Material":"121-0758","Pricedate":"\/Date(1591987955789)\/","Country":"USA","Currency":"USD","Price":"0.000000000","Plant":"","Created":"\/Date(1591987955789)\/","Language":"EN","Configurable":"YES","MessageType":"ERROR","Message":"\nColor code TR\_L2(TRIM) is not suitable for the product surface specified\nProduct specification is incomplete or inconsistent","Characteristics":{"\_\_deferred":{"uri":"https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0013V1\_LIST\_PRC\_VALIDATION\_SRV/ProductConfigurationSet('dTOhzv36qEar17wqVNb3qg')/Characteristics"}}}}

Response: (without the extra details)

# **Order Status web service**

This web service is used to obtain the current order header and line level status’s. The inputs to the web service are: sales order, sales order line, Lynx ID and Lynx line number.

From a user perspective – this web service would be used prior to requesting an order change to either the sales order or the sales order line. Haworth will charge a dealer for a sales order change depending on the status of the sales order. Future web services will utilize this functionality to determine the sales order status prior to implementation of an order change.

## Operation

https://api.haworth.com/api/ordermanagement/orderItemStatuses?$filter=SalesOrderNr eq '227997056' and LynxIDItem eq '20'

Inputs:

SalesOrderNR – the Haworth sales order number

SalesOrderItem – the Haworth sales order line number

LynxID – the Lynx id for a given sales order

LynxIDItem – the Lynx line number that you want to obtain the status on

Note: for a discreet item you need to specify SaleOrderNR, SalesOrderItem and SchdLineNR. Filters are the preferred method to select this data.

Typical response:

<feed xmlns="http://www.w3.org/2005/Atom" xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata" xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices" xml:base="https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0007V1\_ORDER\_MANAGEMENT\_SRV/">

    <id>https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0007V1\_ORDER\_MANAGEMENT\_SRV/orderItemStatuses</id>

    <title type="text">orderItemStatuses</title>

    <updated>2020-08-25T18:11:02Z</updated>

    <author>

        <name/>

    </author>

    <link href="orderItemStatuses" rel="self" title="orderItemStatuses"/>

    <entry>

        <id>https://exthaw.haworth.com:9001/sap/opu/odata/SAP/ZGW0007V1\_ORDER\_MANAGEMENT\_SRV/orderItemStatuses(SalesOrderNr='227997056',SalesOrderItem='000200',SchdLineNr='0001')</id>

        <title type="text">orderItemStatuses(SalesOrderNr='227997056',SalesOrderItem='000200',SchdLineNr='0001')</title>

        <updated>2020-08-25T18:11:02Z</updated>

        <category term="ZGW0007V1\_ORDER\_MANAGEMENT\_SRV.orderItemStatus" scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"/>

        <link href="orderItemStatuses(SalesOrderNr='227997056',SalesOrderItem='000200',SchdLineNr='0001')" rel="self" title="orderItemStatus"/>

        <content type="application/xml">

            <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata" xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">

                <d:SalesOrderNr>227997056</d:SalesOrderNr>

                <d:LynxID>2018818</d:LynxID>

                <d:LynxHDRStatus>Complete</d:LynxHDRStatus>

                <d:LynxChgHDRSts>Green</d:LynxChgHDRSts>

                <d:SalesOrderItem>000200</d:SalesOrderItem>

                <d:POitem>200</d:POitem>

                <d:LynxIDItem>20</d:LynxIDItem>

                <d:SchdLineNr>0001</d:SchdLineNr>

                <d:DelGrp>001</d:DelGrp>

                <d:DlvGrpPlanning>Complete</d:DlvGrpPlanning>

                <d:SoScheduled>Complete</d:SoScheduled>

                <d:DlvCreated>Fully</d:DlvCreated>

                <d:Shipped>Fully</d:Shipped>

                <d:PoCutToSupp></d:PoCutToSupp>

                <d:PoNumber></d:PoNumber>

                <d:ProdOrd>8894654</d:ProdOrd>

                <d:LynxItemStatus>ST33</d:LynxItemStatus>

                <d:LynxChgItemSts>Green</d:LynxChgItemSts>

            </m:properties>

        </content>

    </entry>

</feed>

LynxItemStatus is defined as follows:

Note: existence of a line level purchase order or production order number indicates that sales order specific activities (purchasing or manufacturing) have started for that sales order line and there may be charges associated to any change/cancellation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | Lynx Status | Language | Lynx Status Text | Lynx Change item status | | ST01 | EN | Saved |  | | ST02 | EN | Saved with Errors |  | | ST03 | EN | Transmitted |  | | ST04 | EN | Error |  | | ST05 | EN | Open | Green | | ST06 | EN | Partially Used | Green | | ST07 | EN | Fully Used | Green | | ST08 | EN | Expired | Green | | ST09 | EN | Not Approved |  | | ST10 | EN | Additional Information Required |  | | ST11 | EN | Approved |  | | ST12 | EN | Processed |  | | ST13 | EN | In Process | Green | | ST14 | EN | New Contact Requested |  | | ST15 | EN | New Customer Requested |  | | ST16 | EN | Confirmed | Green | | ST17 | EN | Confirmed with Unotes |  | | ST18 | EN | Delivery Schedule Acknowledgement | Green | | ST19 | EN | Confirmed with Resolved Unotes |  | | ST20 | EN | PO Acknowledged | Green | | ST21 | EN | Submit with Priority |  | | ST22 | EN | PO Acknowledged with Unotes |  | | ST23 | EN | Order Change Requested |  | | ST24 | EN | Order Change Pending |  | | ST25 | EN | Lifespace Change Requested |  | | ST26 | EN | Production Order Release | Green | | ST27 | EN | 10 Days Prior to Shipped Date |  | | ST28 | EN | Delivery Confirmed |  | | ST29 | EN | Shortage |  | | ST30 | EN | Partially Shipped |  | | ST31 | EN | Shipped Complete | Green | | ST32 | EN | PO Acknowledged with Resolved Unotes |  | | ST33 | EN | Invoiced | Green | | ST34 | EN | Order Change Error |  | | ST35 | EN | Order Change Rejected |  | | ST36 | EN | Under Review |  | | ST37 | EN | Rejected |  | | ST38 | EN | Cancelled | Green | | ST39 | EN | Materials Procured | Green | | ST40 | EN | Complete | Green | | ST41 | EN | Partially Invoiced | Green | | ST42 | EN | Certified SIF Error |  | | ST46 | EN | List Price Pending | Red | | ST47 | EN | Potential Product Configuration Error | Red | |

# **Surface Collection(Color) web service**

This web service is used to obtain the following:

* a list of valid standard color codes for a given product (by material number only).
* Color image based on color code for display on a web site, display, customer order/quote document. (Color code must utilize an underscore in place of the dash)

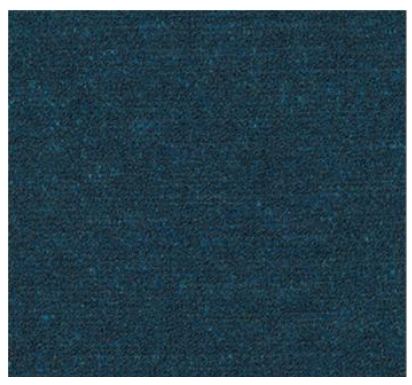
This service only uses GET. Standard client credentials/secret is sufficient to utilize the web service.

## Operation

# <https://api.haworth.com/api/surfacecollection/$metadata>

A typical use of this webservice is to obtain the color image for a given color code. The color code must be submitted with an underscore, all caps and without a leading zero. i.e. 0H-aa will not work but H\_AA will work.

Example: <https://api.haworth.com/qa/api/surfacecollection/FinishMaterialImages(FinishCode='2X_211')\$value>

Would return the image in the body of the request: 

If there isn’t an actual image available then a “No Image” picture will be returned. If there isn’t any image attached to the color code then you will receive an error message similar to: <message>Resource not found for segment 'FinishMaterialImage'</message>

If you are using any of the other endpoints then the material number should be submitted as an 18 digit material number. i.e. 000000000001100944 vs. 1100944.

Generally the other endpoints are used to determine the available standard colors available for a given product. This is used for websites that are supporting Design your Own functionality.

Examples of the other endpoints are:

<https://api.haworth.com/qa/api/surfacecollection/TestResults(ProductMaterial='122-4040',PatternCode='XG',ColorCode='XG_18',SalesOrg='1001',FinishType='UPH',PatternChar=true,CharName='CH_MTL_SCT_TEST1')?$format=json>

<https://api.haworth.com/qa/api/surfacecollection/ValidByProducts(ProductMaterial='122-4040',PatternCode='XG',ColorCode='XG_18',SalesOrg='1001',SapPatFtype='UPH')?$format=json>

https://api.haworth.com/qa/api/surfacecollection/TestResults?$filter=ProductMaterial eq '122-4040' and PatternCode eq 'XG' and ColorCode eq 'XG\_18' and SalesOrg eq '1001' and FinishType eq 'UPH'&$format=json&$inlinecount=allpages

https://api.haworth.com/qa/api/surfacecollection/ValidByProducts?$filter=(ProductMaterial eq '000000000001100944' and SurfaceProgram eq 'STD' )&$format=json

# **Authentication: Appendix**

Haworth REST APIs: Access and Usage

# Getting an Access Token

To access Haworth APIs you will need to get an Oauth2 access token in order to authorize your application or user to use the REST services.

Below is explained how to use the Client Credentials Flow, Resource Owner Password Credentials Flow, Authorization Code Flow, Implicit Grand Flow, and the Refresh Token Flow for obtaining a token.

The Client Credentials Flow does not require a user to enter their credentials, however it can only access resources available to the application, and not user owned resources.

The Resource Owner Password Credentials Flow allows access to user owned resources, but requires a user to enter their username and password in some way so that it can be passed with the request for a token. This is not the most secure method as it requires passing the username and password across the web. Microsoft recommends using this method as a last resort when other methods are not possible.

The Authorization Code Flow and Implicit Grant Flow is preferred over the Resource Owner Password Credentials Flow for security reasons. To make this work you will need to be able to open an internet browser, and have a place that can be redirected to so that you can receive an authorization code or an access token.

### What you need

* Client Id
* Client Secret
* Scopes – example scopes:
  + https://api.haworth.com/materials:read
  + https://api.haworth.com/priceList:read
  + https://api.haworth.com/tailoredSolutions:read
* Redirect URI – This is something that you would need to setup within your systems. It would be used to accept an Authorization Code which could in turn be used to request an access token. This is needed for the Authorization Code and Implicit Grant Flows described below.
* Username/password – A user will need to be able to enter their credentials via a form or browser if needing to access any user owned resources. As a developer you shouldn’t need these directly, but the user will need a way to enter them.

# Using the Client Credentials Flow

The client credentials authorization flow is used to access an API on behalf of the application itself, it will not have access to user owned resources such as orders or quotes. However, it will allow you to look up global data such as product list price and product lead time data.

## Getting an Access Token using the Client Credentials Flow:

1. Make a POST call:
   1. Uri:

https://login.microsoftonline.com/72105ce1-edf3-4664-ae65-fd5a1e0a5487/oauth2/v2.0/token

* 1. Include this Header:

Content-Type: application/x-www-form-urlencoded

* 1. Body Content:

client\_id={client-id}  
&scope=https%3A%2F%2Fapi.haworth.com%2F.default  
&client\_secret={client-secret}  
&grant\_type=client\_credentials

Insert your own client-id and client-secret into the POST body when making this call. Note that the scopes for the Client Credentials Flow will be the default scopes for the client, and cannot be specifically requested.

1. You can expect the following token response:

{  
 "token\_type": "Bearer",  
 "expires\_in": 3599,  
 "access\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6Ik1uQ19WWmNBVGZNNXBP..."  
}

For more information on the Client Credentials flow from Microsoft, please visit [here](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-client-creds-grant-flow).

# Using the Resource Owner Password Credentials Flow

The Resource Owner Password Credentials Flow is used to request a token on a user’s behalf and to access resources a specific user has access to such as orders and quotes. This flow requires knowledge of the user’s user account as well as their password, and does require sending that information over the internet. Because of this Microsoft does not recommend using this flow unless it is the only option available, and they suggest using a more secure flow such as the Authorization Code Flow.

## Getting an Access Token using the Resource Owner Password Credentials Flow:

1. Make a POST call:
   1. Uri:

https://login.microsoftonline.com/72105ce1-edf3-4664-ae65-fd5a1e0a5487/oauth2/v2.0/token

* 1. Include this Header:

Content-Type: application/x-www-form-urlencoded

* 1. Body Content:

client\_id={client-id}

&scope={scopes, space delimited, URI formatted}  
&client\_secret={client-secret}

&username={username, including @myhaworth.com}

&password={user password}

&grant\_type=password

Insert your own client-id and client-secret, scopes, and user authentication information into the POST body when making this call.

1. You can expect a token response similar to the following:

{  
 "token\_type": "Bearer",  
 "scope": "listPrice:read tailoredSolutions:read",  
 "expires\_in": 3599,  
 "access\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6Ik5HVEZ2ZEstZnl0aEV1Q...",  
 "refresh\_token": "AwABAAAAvPM1KaPlrEqdFSBzjqfTGAMxZGUTdM0t4B4...",  
 "id\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJhdWQiOiIyZDRkMTFhMi1mODE0LTQ2YTctOD..."  
}

The refresh toke can be used to retrieve a new access token for the user once the access token has expired. For an example of using the refresh token, please refer to that section below. For more information on the Resource Owner Password Credentials Flow, please visit [here](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth-ropc).

# Using the Authorization Code Flow

To use the Authorization Code Flow an internet browser is required. You will need to open direct the browser to a login page, as well as have a redirect URL that an authorization code can be sent back to via a query string parameter.

1. If needed open a browser and navigate to the following URL:

https://login.microsoftonline.com/72105ce1-edf3-4664-ae65-fd5a1e0a5487/oauth2/v2.0/authorize?  
client\_id={client-id}  
&response\_type=code  
&redirect\_uri={your redirect URI}  
&response\_mode=query  
&scope={scopes, space delimited, URI encoded}  
&state=12345

Insert your own client-id, redirect URI, and scopes into the URI when making this request.

1. The user will be prompted to authenticate with their Haworth user account. If they are already signed in with their Haworth account, single sign on will take over, and they will not be asked for their username and password again. Once authenticated, they will be redirected back to your redirect URI, with an authorization code in the URI as a query string parameter similar to the following.

https://{your redirect URI}?  
code=AwABAAAAvPM1KaPlrEqdFSBzjqfTGBCmLdgfSTLEMPGYuNHSUYBrq...  
&state=12345

1. With the authorization code provided in the previous step you will then need to request an access token by making a POST http call.
   1. Uri:

https://login.microsoftonline.com/72105ce1-edf3-4664-ae65-fd5a1e0a5487/oauth2/v2.0/token

* 1. Include this Header:

Content-Type: application/x-www-form-urlencoded

* 1. Body Content:

client\_id={client-id}  
&scope={scopes, space delimited, URI encoded}  
&code={authorization code from previous step}  
&redirect\_uri={your redirect URI}  
&grant\_type=authorization\_code  
&client\_secret={client-secret}

1. You can expect a token response similar to the following:

{  
 "token\_type": "Bearer",  
 "scope": "listPrice:read tailoredSolutions:read",  
 "expires\_in": 3599,  
 "access\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6Ik5HVEZ2ZEstZnl0aEV1Q...",  
 "refresh\_token": "AwABAAAAvPM1KaPlrEqdFSBzjqfTGAMxZGUTdM0t4B4...",  
 "id\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJhdWQiOiIyZDRkMTFhMi1mODE0LTQ2YTctOD..."  
}

The refresh token can be used to retrieve a new access token for the user once the access token has expired. For an example of using the refresh token, please refer to that section below. For more information on the Authorization Code Flow, click [here](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-auth-code-flow). Also a similar flow called the Implicit Grant Flow can be used to get a token directly without an Authorization Code, this will also require a browser. More information on the Implicit Grant Flow can be found [here](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-implicit-grant-flow).

# The Refresh Token Flow

After an access token has expired, a new one can be requested on behalf of the user without the user needing to reauthenticate. This is done using the refresh token that was given along with the access token when the initial authorization request was made. Note: As the Client Credentials Flow does not require a user to authenticate a refresh token is not given, however you can simply request a new access token again using the Client Credentials Flow.

1. Make a POST call:
   1. Uri:

https://login.microsoftonline.com/72105ce1-edf3-4664-ae65-fd5a1e0a5487/oauth2/v2.0/token

* 1. Include this Header:

Content-Type: application/x-www-form-urlencoded

* 1. Body Content:

client\_id={client-id}

&scope={scopes, space delimited, URI encoded}

&refresh\_token={refresh token from initial access token request}

&grant\_type=refresh\_token

&client\_secret={client-secret}

Insert your own client-id and client-secret into the POST body when making this call.

1. You can expect a token response similar to the following:

{  
 "token\_type": "Bearer",  
 "scope": "listPrice:read tailoredSolutions:read",  
 "expires\_in": 3599,  
 "access\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6Ik5HVEZ2ZEstZnl0aEV1Q...",  
 "refresh\_token": "AwABAAAAvPM1KaPlrEqdFSBzjqfTGAMxZGUTdM0t4B4...",  
 "id\_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJhdWQiOiIyZDRkMTFhMi1mODE0LTQ2YTctOD..."  
}

The new access token will come with another refresh token which can be used when the new access token has expired to request another new token. For more information on the Refresh Token Flow, please click [here](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-auth-code-flow#refresh-the-access-token).

# Other Authorization Flows

There are some other less used authorization flows that are supported by our identity platform. These may require help from Haworth development support in order to setup. For more information on these flows, please visit [here](https://docs.microsoft.com/en-us/azure/active-directory/develop/authentication-flows-app-scenarios).

# Accessing an API

Once you have an access token, you will be able to access any Haworth APIs that the particular token is scoped to access. To authorize to the resource, you will need to make an HTTP call per the documentation of the particular API and include with the call an authorization header

Authorization: Bearer {access token}

When not using the Client Credentials Flow, you can get the information of the currently logged in user by accessing the userinfo endpoint.

https://api.haworth.com/api/userinfo

## Resources

[Microsoft Client Credentials Flow](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-client-creds-grant-flow)

[Microsoft Resource Owner Password Credentials Flow](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth-ropc)

[Microsoft Authorization Code Flow](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-auth-code-flow)

[Microsoft Implicit Grant Flow](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-implicit-grant-flow)

[Microsoft Refresh Token Flow](https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-oauth2-auth-code-flow#refresh-the-access-token)

[Microsoft Authentication Flows and Scenarios](https://docs.microsoft.com/en-us/azure/active-directory/develop/authentication-flows-app-scenarios)

[Microsoft Authentication Basics](https://docs.microsoft.com/en-us/azure/active-directory/develop/authentication-scenarios)

[OAuth2 RFC](https://tools.ietf.org/html/rfc6749)