



ENVIRONMENTAL PRODUCT DECLARATION

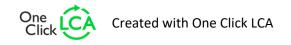
IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Drywall Screws Hilti AG



EPD HUB, HUB-2479

Published on 20.12.2024, last updated on 20.12.2024, valid until 20.12.2029









GENERAL INFORMATION

MANUFACTURER

Manufacturer	Hilti AG
Address	Feldkircherstrasse 100, , FL-9494, Schaan, , CH
Contact details	Sustainability@Hilti.com
Website	www.hilti.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com							
Reference standard	EN 15804+A2:2019 and ISO 14025							
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023							
Sector	Construction product							
Category of EPD	Third party verified EPD							
Parent EPD number	-							
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D							
EPD author	Elise Janssen							
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☐ External verification							
EPD verifier	Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited							

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if

they do not comply with EN 15804 and if they are not compared in a building context.

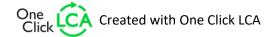
PRODUCT

2

Product name	Drywall Screws
Additional labels	see appendix
Product reference	2356366
Place of production	Rayong Thailand
Period for data	2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	-1.7 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of carbon steel screw
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	4.01E+00
GWP-total, A1-A3 (kgCO2e)	3.79+00
Secondary material, inputs (%)	21.3
Secondary material, outputs (%)	84.8
Total energy use, A1-A3 (kWh)	13.7
Total water use, A1-A3 (m3e)	0.02







PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

The Hilti Group supplies the worldwide construction and energy industries with technologically leading products, systems, software and services. With about 33,000 team members in over 120 countries the company stands for direct customer relationships, quality and innovation. Hilti generated annual sales of more than CHF 6.3 billion in 2022. The headquarters of the Hilti Group have been located in Schaan, Liechtenstein, since its founding in 1941. The company is privately owned by the Martin Hilti Family Trust, which ensures its long-term continuity. The Hilti Group's purpose is making construction better, based on a passionate and inclusive global team and a caring and performance-oriented culture.

PRODUCT DESCRIPTION

The HILTI Drywall Screw portfolio includes a variety of screws designed for various board fastening applications. The portfolio features fine thread stitch tip screws that are dark grey phosphated. Typical applications for these drywall screws include fastening boards to wood or metal substructures. The representative product is the Drywall screw S-DS01B 3,5x35 which is a stitchtip screw with black phosphate coating.

Further information can be found at www.hilti.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Ha Tinh, Vietnam
Minerals		
Fossil materials		
Bio-based materials		

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

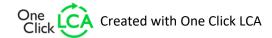
Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.056

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	kg
Mass per declared unit	1 kg
Functional unit	
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).







PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Pro	duct s	tage		mbly age		Use stage								ife sta	:	Beyond the system boundaries				
A1	A2	А3	A4	A5	B1	В2	В3	В4	В5	В6	В7	C1	C2	СЗ	C4					
×	×	×	×	×	MND	MND	MND	MD	MND	MND	MND	×	×	×	×	×				
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling		

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The phosphate steel screw is made from low-carbon steel. The referenced product is S-DS01B 35x55 dry wall screw, which is a fine thread stitch tip screws, used for connection of drywall boards to metal substructures. The steel is BOF. The coils are cut and cold formed to form the blank in its final size and shape. The part is the rolled to form the thread and the heat treated to get the desired properties. The steel screw is phosphate and finally packaged and distributed. The manufacturing process requires electricity for powering the production equipment. A wooden pallet and cardboard are used as packaging materials for transporting the screw to the dedicated market places.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation is calculated based on the distance traveled by lorry/ship from the supplier to the warehouses in Hilti Liechtenstein and Hilti North America. Vehicle capacity utilization volume factor may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as product is packaged properly.

Environmental impacts from installation into the building include generation of waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets/cardboard boxes. The impacts of material production, its processing and its disposal as installation waste are also assessed. Screws used in the installation process and electricity consumption for the assembly are considered, too. No installation losses happen in this stage if the installation process is carried out appropriately according to Hilti instructions.

4





PRODUCT USE AND MAINTENANCE (B1-B7)

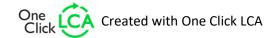
The use phase is not relevant for the life cycle emissions of this product and is, therefore, not accounted into the assessment.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The product is considered to be dismantled by a power tool and with negligible energy use. It is assumed that the steel waste is collected separately and transported to the waste treatment facility. Transportation distance to waste treatment plant and to landfill is assumed to be 100 km, the transportation method is assumed to be lorry. Module C3 accounts for energy and resource inputs for sorting and treating of steel for recycling. Landfilled material is included in module C4. Due to the material recovery potential of the product and material and energy recovery potential of its packaging, recycled raw materials lead to avoided virgin material production and the energy recovered from incineration replaces electricity and heat from primary sources. Benefits and loads from incineration and recycling are included in Module D.

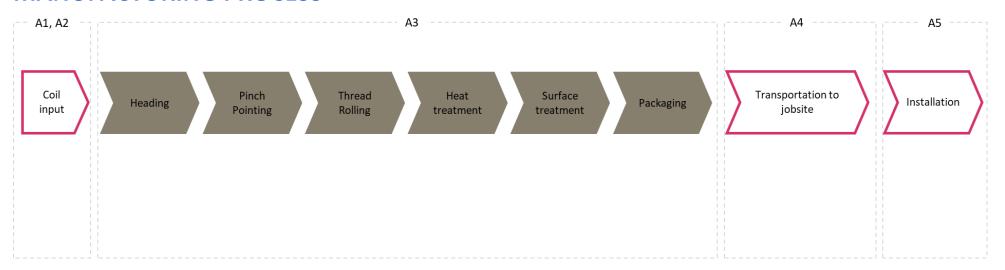
Recycling rate of 85% in the calculation is based on world average. Actual recyclability may vary between regions.







MANUFACTURING PROCESS



6





LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

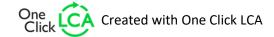
Type of average	Multiple products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	-1.7 %

The representative product is the Drywall screw S-DS01B 3,5x35 which is a stitch-tip screw with black phosphate coating.

The products included in the averaging are also dry wall screws, with phosphate coating but different screw lengths. They share the function of connecting drywall boards to metal substructures.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10 and One Click LCA databases as sources of environmental data.





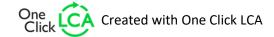


ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	B7	C1	C2	С3	C4	D
GWP – total ¹⁾	kg CO₂e	2,47E+00	1,95E-02	1,30E+00	3,79E+00	8,52E-02	2,23E-01	MND	0,00E+00	1,08E-02	2,33E-02	9,39E-04	-1,85E+00						
GWP – fossil	kg CO₂e	2,47E+00	1,95E-02	1,51E+00	4,01E+00	8,51E-02	4,12E-03	MND	0,00E+00	1,08E-02	2,32E-02	9,38E-04	-1,85E+00						
GWP – biogenic	kg CO₂e	0,00E+00	0,00E+00	-2,18E-01	-2,18E-01	0,00E+00	2,19E-01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
GWP – LULUC	kg CO₂e	9,58E-04	9,66E-06	3,81E-03	4,78E-03	5,49E-05	1,94E-06	MND	0,00E+00	4,31E-06	2,19E-05	4,87E-07	-1,30E-03						
Ozone depletion pot.	kg CFC-11e	1,55E-08	2,84E-10	1,28E-08	2,85E-08	1,21E-09	3,92E-11	MND	0,00E+00	1,59E-10	2,48E-10	2,71E-11	-1,13E-08						
Acidification potential	mol H⁺e	9,90E-03	2,37E-04	7,80E-03	1,79E-02	2,23E-03	2,27E-05	MND	0,00E+00	3,67E-05	2,47E-04	6,65E-06	-8,82E-03						
EP-freshwater ²⁾	kg Pe	8,84E-05	1,44E-07	7,76E-05	1,66E-04	3,85E-07	8,33E-08	MND	0,00E+00	9,83E-08	9,71E-07	9,22E-09	-2,23E-04						
EP-marine	kg Ne	1,99E-03	5,80E-05	1,44E-03	3,48E-03	5,08E-04	8,44E-06	MND	0,00E+00	1,19E-05	5,37E-05	2,52E-06	-1,53E-03						
EP-terrestrial	mol Ne	2,29E-02	6,45E-04	1,55E-02	3,90E-02	5,66E-03	8,54E-05	MND	0,00E+00	1,31E-04	6,19E-04	2,77E-05	-1,66E-02						
POCP ("smog") ³)	kg NMVOCe	7,54E-03	1,99E-04	4,73E-03	1,25E-02	1,57E-03	2,61E-05	MND	0,00E+00	5,40E-05	1,82E-04	9,91E-06	-6,24E-03						
ADP-minerals & metals ⁴)	kg Sbe	1,87E-05	4,24E-08	8,28E-06	2,70E-05	1,01E-07	2,44E-08	MND	0,00E+00	3,00E-08	1,36E-06	1,49E-09	-2,74E-06						
ADP-fossil resources	MJ	2,39E+01	2,66E-01	1,96E+01	4,38E+01	1,04E+00	4,31E-02	MND	0,00E+00	1,56E-01	2,74E-01	2,30E-02	-2,47E+01						
Water use ⁵⁾	m³e depr.	6,29E-01	1,13E-03	3,44E-01	9,75E-01	3,30E-03	2,17E-03	MND	0,00E+00	7,50E-04	4,09E-03	6,43E-05	-6,46E-01						

¹⁾ GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.







ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS - EN 15804+A2, PEF

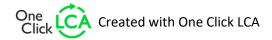
Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	В5	В6	В7	C1	C2	СЗ	C4	D
Particulate matter	Incidence	2,20E-07	1,42E-09	7,40E-08	2,96E-07	2,50E-09	3,45E-10	MND	0,00E+00	1,07E-09	3,35E-09	1,51E-10	-1,70E-07						
Ionizing radiation ⁶⁾	kBq 11235e	2,03E-02	7,93E-05	7,68E-02	9,72E-02	2,17E-04	4,03E-05	MND	0,00E+00	5,38E-05	3,97E-04	5,68E-06	-2,99E-02						
Ecotoxicity (freshwater)	CTUe	6,98E+01	6,01E-02	4,86E+00	7,47E+01	2,04E-01	4,29E-02	MND	0,00E+00	3,77E-02	2,05E-01	3,14E-03	-1,76E+02						
Human toxicity, cancer	CTUh	2,00E-07	9,70E-11	2,32E-09	2,02E-07	4,23E-10	5,72E-11	MND	0,00E+00	5,35E-11	1,76E-10	4,24E-12	-6,36E-07						
Human tox. non-cancer	CTUh	3,07E-08	1,40E-10	1,61E-08	4,70E-08	2,85E-10	2,63E-10	MND	0,00E+00	1,03E-10	1,19E-09	4,13E-12	-3,55E-08						
SQP ⁷⁾	-	7,82E+00	1,83E-01	1,86E+01	2,66E+01	8,48E-02	3,38E-02	MND	0,00E+00	1,57E-01	5,15E-01	4,53E-02	-1,13E+01						

⁶⁾ EN 15804+A2 disclaimer for lonizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

										1									
Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	В2	В3	B4	B5	В6	В7	C1	C2	С3	C4	D
Renew. PER as energy ⁸⁾	MJ	2,30E+00	3,10E-03	3,50E+00	5,81E+00	9,20E-03	-2,21E+00	MND	0,00E+00	2,05E-03	4,13E-02	2,13E-04	-2,90E+00						
Renew. PER as material	МЈ	0,00E+00	0,00E+00	1,81E+00	1,81E+00	0,00E+00	-1,81E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,27E+00						
Total use of renew. PER	MJ	2,30E+00	3,10E-03	5,31E+00	7,62E+00	9,20E-03	-4,02E+00	MND	0,00E+00	2,05E-03	4,13E-02	2,13E-04	-1,62E+00						
Non-re. PER as energy	MJ	2,39E+01	2,66E-01	1,94E+01	4,35E+01	1,04E+00	4,31E-02	MND	0,00E+00	1,56E-01	2,74E-01	2,30E-02	-2,47E+01						
Non-re. PER as material	MJ	0,00E+00	0,00E+00	5,86E-02	5,86E-02	0,00E+00	-5,86E-02	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,14E-03						
Total use of non-re. PER	MJ	2,39E+01	2,66E-01	1,94E+01	4,36E+01	1,04E+00	-1,54E-02	MND	0,00E+00	1,56E-01	2,74E-01	2,30E-02	-2,47E+01						
Secondary materials	kg	2,13E-01	1,26E-04	5,13E-02	2,64E-01	5,92E-04	6,94E-05	MND	0,00E+00	6,64E-05	3,15E-04	5,78E-06	-1,11E-01						
Renew. secondary fuels	MJ	2,82E-04	1,05E-06	3,72E-02	3,75E-02	1,25E-06	3,31E-07	MND	0,00E+00	8,43E-07	1,43E-05	1,20E-07	-7,38E-04						
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
Use of net fresh water	m ³	1,36E-02	3,22E-05	9,64E-03	2,33E-02	7,89E-05	2,14E-05	MND	0,00E+00	2,26E-05	1,14E-04	2,39E-05	-1,59E-02						

9



Drywall Screws

⁸⁾ PER = Primary energy resources.





END OF LIFE – WASTE

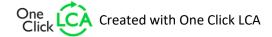
Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	С3	C4	D
Hazardous waste	kg	9,98E-01	4,41E-04	1,28E-01	1,13E+00	1,63E-03	5,97E-04	MND	0,00E+00	2,66E-04	2,14E-03	2,56E-05	-6,89E-01						
Non-hazardous waste	kg	5,15E+00	7,46E-03	3,24E+00	8,40E+00	2,21E-02	6,07E-02	MND	0,00E+00	4,93E-03	6,02E-02	5,84E-04	-1,69E+01						
Radioactive waste	kg	1,27E-05	4,99E-08	4,90E-05	6,18E-05	1,37E-07	2,51E-08	MND	0,00E+00	3,38E-08	2,45E-07	3,58E-09	-2,66E-05						

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	В5	В6	В7	C1	C2	С3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
Materials for recycling	kg	0,00E+00	0,00E+00	4,24E-02	4,24E-02	0,00E+00	1,35E-01	MND	0,00E+00	0,00E+00	8,48E-01	0,00E+00	0,00E+00						
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,32E+01	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00						

ENVIRONMENTAL IMPACTS - EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	В5	В6	В7	C1	C2	С3	C4	D
Global Warming Pot.	kg CO₂e	2,46E+00	1,94E-02	1,52E+00	3,99E+00	8,48E-02	6,29E-03	MND	0,00E+00	1,07E-02	2,32E-02	9,29E-04	-1,83E+00						
Ozone depletion Pot.	kg CFC ₋₁₁ e	1,65E-08	2,26E-10	1,21E-08	2,88E-08	9,63E-10	3,22E-11	MND	0,00E+00	1,27E-10	2,05E-10	2,15E-11	-1,19E-08						
Acidification	kg SO₂e	8,04E-03	1,90E-04	6,36E-03	1,46E-02	1,80E-03	1,70E-05	MND	0,00E+00	2,80E-05	1,99E-04	4,92E-06	-7,26E-03						
Eutrophication	kg PO ₄ ³e	1,39E-03	2,37E-05	1,56E-03	2,97E-03	1,82E-04	6,05E-06	MND	0,00E+00	6,82E-06	2,83E-05	1,56E-06	-1,72E-03						
POCP ("smog")	kg C ₂ H ₄ e	1,07E-03	1,06E-05	3,84E-04	1,46E-03	8,89E-05	2,45E-06	MND	0,00E+00	2,50E-06	1,18E-05	4,65E-07	-1,19E-03						
ADP-elements	kg Sbe	1,85E-05	4,15E-08	8,23E-06	2,68E-05	9,95E-08	2,38E-08	MND	0,00E+00	2,92E-08	1,35E-06	1,46E-09	-2,54E-06						
ADP-fossil	MJ	2,39E+01	2,66E-01	1,96E+01	4,38E+01	1,04E+00	4,31E-02	MND	0,00E+00	1,56E-01	2,74E-01	2,30E-02	-2,47E+01						







VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

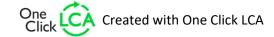
I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited 20.12.2024









APPENDIX

Item number	Item name	Weight per piece [kg/pc]
2356365	Drywall screw S-DS01B 3,5x25	0.00130
2356366	Drywall screw S-DS01B 3,5x35	0.00170
2356368	Drywall screw S-DS01B 3,5x45	0.00218
2356369	Drywall screw S-DS01B 3,5x55	0.00279
2365153	Drywall screw 6 X 1 PBH S	0.00129
2365154	Drywall screw 6 X 1-1/8 PBH S	0.00142
2365158	Drywall screw 6 X 2 PBH S	0.00238

