

RIFENG PRESS FITTINGS

 **EPD**[®]
THE INTERNATIONAL EPD[®] SYSTEM



ENVIRONMENTAL PRODUCT DECLARATION

Rifeng PRESS Fittings

This EPD is representative of the weighted average press fittings (incorporating F series fittings and PF15 fittings) production, complied with ISO 14025:2006 and EN15804 2012+A1:2013

Geographical area of application of this EPD : China

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FOR 50 YEARS

UNITED NATIONS

Future
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1. ENVIRONMENTAL PRODUCT DECLARATION DETAILS.....	4
2. EPD COMPLIANCE.....	5
3. RIFENG PIPING SYSTEM SOLUTIONS.....	6
4. PRODUCT LIFE CYCLE OVERVIEW.....	8
4.1 LIFE CYCLE OF RIFENG PRESS FITTINGS.....	9
4.2 MANUFACTURE STAGE.....	10
4.3 DISTRIBUTION STAGE.....	11
4.4 INSTALLATION STAGE.....	11
4.5 USE STAGE.....	13
4.6 END OF LIFE STAGE.....	13
5. LIFE CYCLE ASSESSMENT METHODOLOGY.....	14
5.1 CORE DATA COLLECTION.....	14
5.2 BACKGROUND DATA.....	15
5.3 CUT OFF CRITERIA.....	16
5.4 ALLOCATION.....	16
5.5 VARIATION.....	16
5.6 PRESS FITTINGS ENVIRONMENTAL PERFORMANCE.....	16
5.7 INTERPRETATION OF LCA RESULTS.....	19
6. PRODUCT INFORMATION.....	20
6.1 PRODUCT SPECIFICATIONS.....	20
6.2 OTHER TECHNICAL INFORMATION.....	25
7. REFERENCES.....	26

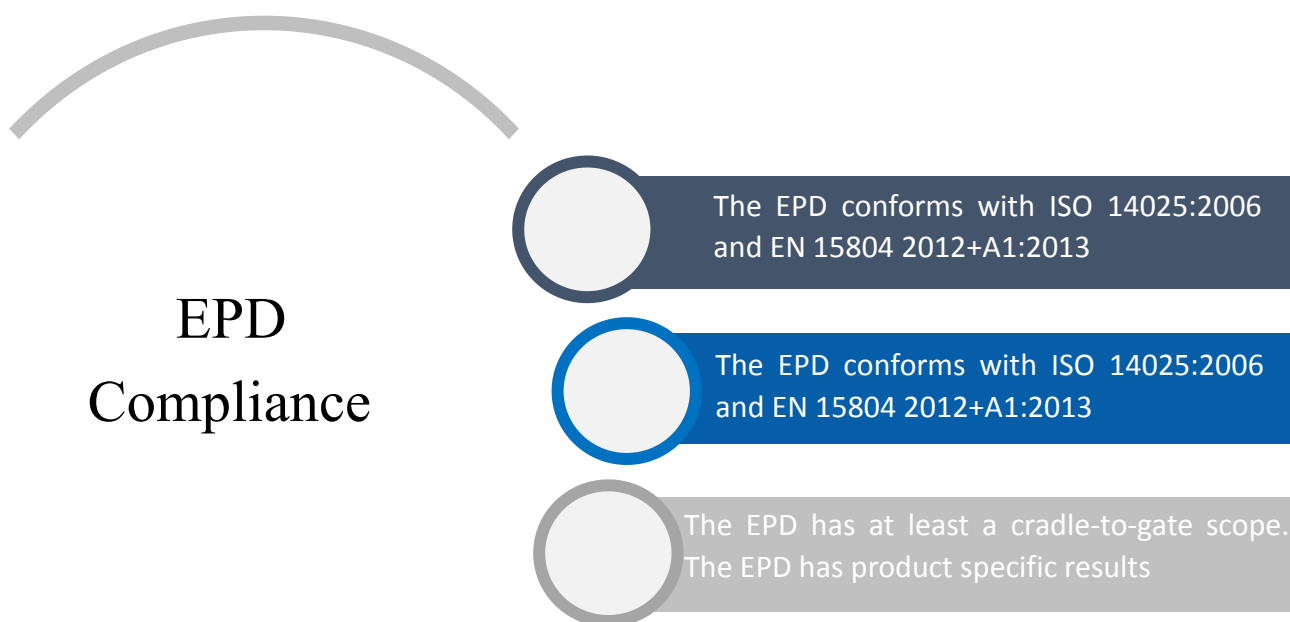
1. ENVIRONMENTAL PRODUCT DECLARATION DETAILS

An Environmental Product Declaration, or EPD, is a standardised and verified way of quantifying the environmental impacts of a product based on a consistent set of rules known as a PCR (Product Category Rules).

Environmental product declarations within the same product category from different programmes may not be comparable. EPD of construction products may not be comparable if they do not comply with EN15804 2012+A1:2013

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CEN STANDARD EN15804 2012+A1:2013 SERVED AS THE CORE PCR	
PCR	Construction Products and Construction Services, Version 2.3 (2018-11-15)
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Accredited /approved by	EPD International AB
Independent external verification of the declaration and data, according to ISO 14025:2006	☐ EPD process certification (Internal) ☒ EPD verification (External)

The Rifeng PRESS fittings EPD results can also be used to represent PRESS fittings products in Whole of Building Life Cycle Assessments. This EPD is complied with its requirement as below.





Rifeng Introduction

Rifeng Enterprise Group Co., Ltd., established in 1996, has been committed to developing high-quality and environmental - friendly piping products that cover the plumbing, indoor climate, drainage, electrical and gas fields with product systems ranging from multilayer pipes to PEX, PERT, PP-R, PVC, and brass hardware such as fittings, manifold and valves, under optional sizes from DN 09 to DN160 mm, to provide systematic solutions.

With over 5,000 employees and 6 manufacturing bases in China respectively located in Foshan, Shenyang, Tianjin, Shanxi, Hubei and Sichuan. It is only Foshan base has the business of export. Rifeng is increasingly taking an active role in the plastic piping markets and lays out a wide sales

Investments for international talents, accurate testing instruments and advanced hardware equipments are yearly increasing in R&D sector and it founded 2 research institutes, named National Technical Center and CNAS Certification Laboratory. With more technical improvement and product innovation, Rifeng is confident to provide customers with more hygienic and secure piping products all the time.

Rifeng piping system has more than 50 certificates, such as NSF, DVGW, AENOR, WRAS WaterMark, StandardsMark etc. These certificates worldwide underline our technical and quality know-how, and we can provide you with 25 years system warranty backed up by an international insurance company. Rifeng always implement the concept of customer value to satisfy different demands, and continuously provide customers with piping solutions and technical supports.

Rifeng PRESS Fittings

Rifeng press fittings could be used together with Rifeng multilayer pipe as system for hot and cold water installation as well as gas application. The fitting series include F5, F8, F9, F17, F18 and PF15 and subsequent new press fitting. F series consist of brass body, plastic block, stainless steel sleeve and sealing O-ring. PF15 is the same components but without O-ring.



When connecting with corresponding pipes, the fittings mainly use the sleeve to press the pipe with O-ring to achieve tightness proof. The installation can be done manually by one person with the tools. Rifeng press fittings ranging from DN 12 to DN75 or 1/8" to 1".

Table 1 Product characteristics of Rifeng press fittings

Product names	Rifeng press fittings see table 9 for individual product codes
UN CPC Code	41516 Tubes, pipes and tube or pipe fittings, of copper
Brass material	DZR brass or Lead-free brass or other brass (up to market demand, material test refers to EN 12164:2016)
Nominal diameter	12mm~75mm or 1/8" to 1"

Note: No CPC code available for brass, therefore copper is used as an approximation.

Table 2 - Content Declaration

Material	Percentage Content	CAS No.
Brass	90.0%	63338-02-3
Stainless steel sleeve	8.5%	SUS304
Plastic Block	0.7%	9002-88-4
O-ring	0.8%	EPDM rubber (nothing hazardous)
Total	100%	

Rifeng press fittings do not contain any substances as such or in concentration exceeding legal limits, which can adversely affect human health and the environment in any stages of its entire life cycle.

General

The life cycle of a building product is divided into three process modules according to EN 15804 2012+A1:2013 and ISO 14025:2006, the Product Category Rules for Type III Environment Declaration of Construction Products of International EPD Program. Table 3 shows the scope and system boundary of Rifeng press fittings assessment. The scope is “cradle to gate” as defined by EN 15804 2012+A1:2013.

This EPD intent is to cover all environmental impacts of significant concern over the product life cycle based on “cradle to gate” scope. Modules C1-C4 were deemed not relevant (of negligible impact) due to the fact that the pipes are left in the ground at end of life with negligible potential environmental impact. Other than module A1~A3, all other use stage modules were also deemed not relevant.

Table 3- System boundary and scope of assessment

Product stage			Construc tion stage		Use stage							End of life stage			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
material supply	Transport	Manufacturing	Transport	Installation	Material emissions	Maintenance	Repair	Replacement	Refurbishment	Operational energy	Operational water	Deconstruction/Demolition	Transport	Waste processing	Disposal
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

X = module include in EPD

MND= module not declared (does not indicate zero impact result)

4. PRODUCT LIFE CYCLE OVERVIEW

4.1 LIFE CYCLE OF RIFENG PRESS FITTINGS

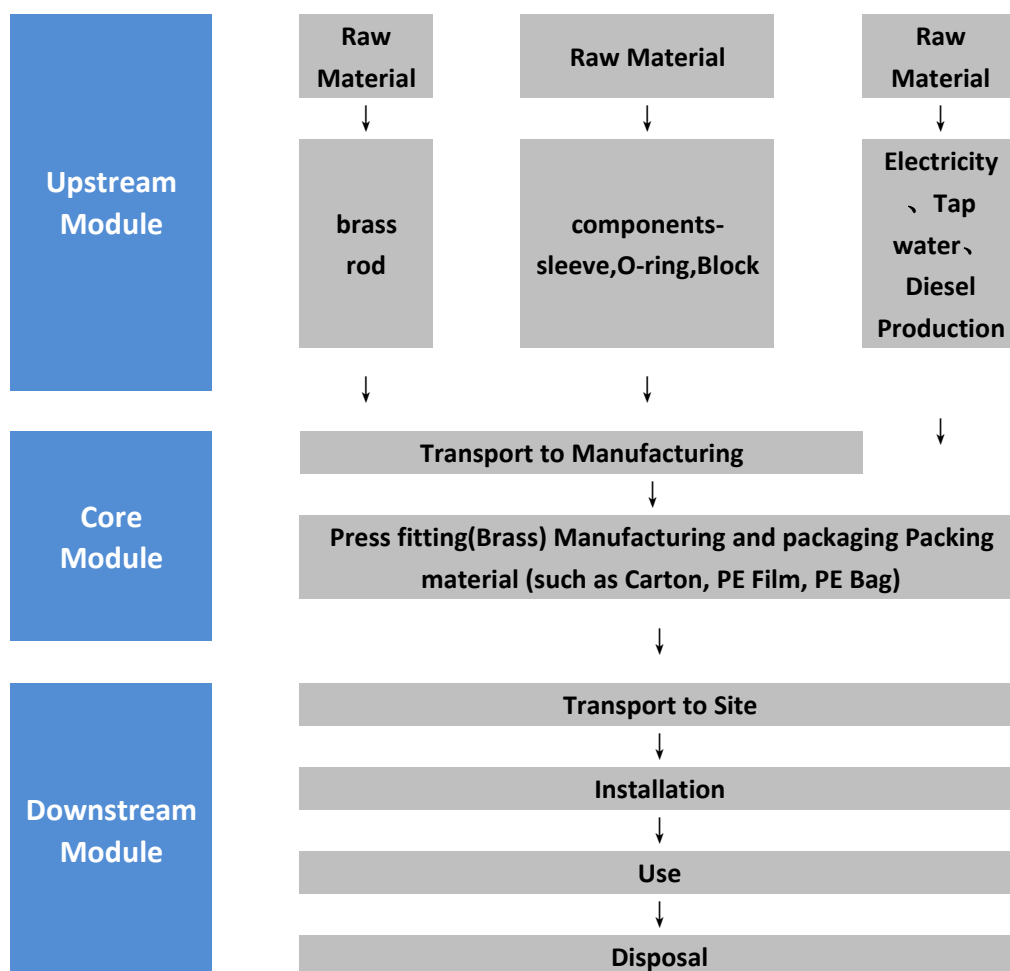


Figure 1 - life cycle diagram of press fitting production

System boundary in this EPD involves the upstream module and core module referring to A1~A3 stage in table 3. Downstream module (A4~A5, B1~B7, C1~C4) is out of the scope of study.

4. PRODUCT LIFE CYCLE OVERVIEW



4.2 MANUFACTURE STAGE

RIFENG

PRESS FITTING MANUFACTURE

Raw material of press fittings would mainly be brass rod which is manufactured by mechanical process to cover all the workmanship before finished product.

Raw brass rod will be subjected to the mainly processes including cutting, hot forging, deflashing, machining and assembling. The in-process and finished inspection will be carry out to ensure product quality before shipping. Packing materials will be plastic bags and cartons.(Foshan base location of the map: F1-F14 No.1 Rifeng Road, Foshan, Guangdong, CHINA)



The results of this EPD are representative of the weighted average press fittings production, incorporating F series fittings and PF15 fitting. It is based on 1kg product output to calculate the impact on environment in the phases of material supply, transport, manufacturing and packaging

In the A2 stage(Transport), the transport distances and means of transportation, as below.

- ✓ The raw material transportation is a truck, and the total transportation distance is 1.94E-01 km/per 1 kg of manufactured product.
- ✓ The packaging materials are transported as trucks with a total transport distance of 9.33E-04 km/per 1 kg of manufactured product.

In the manufacturing stage, there will be defective scrapping of the products, but these fittings can not be reused .It would be recycled to suppliers for manufacturing.

4.3 DISTRIBUTION STAGE

Rifeng has one press fittings ,for export, manufacturing facility in China and the vast majority of fittings transportations are crossing a long way by ship to foreign region in Asia, America, Australia and Europe.

4.4 INSTALLATION STAGE

Rifeng press fittings could be used together with Rifeng multilayer pipe as system mainly for hot and cold water installation as well as gas application.

The main installation steps refer to the following instruction. It's emphasized that different fitting need to be pressed with approved tools, manual tools or electric tools can be used.

Multilayer Gas Pipe + F5 (Electric)



Step 1: Pipe cutting

Cut the pipe vertically and precisely with rifeng pipe cutter.



Step4: Use the electric pressing tool for F5 fitting installation. Pressing the button on the bar and the pin will be released automatically.



Step 2: Rounding and beveling

Round and bevel the end holes of the pipe with the a plastic reamer.



Pressing the latch back onto position and the jaw will be locked onto the tool automatically.



Step 3: Inserting

Choose the right size sleeved-fitting for the pipe and aim the pipe end at the ring-shape hole of the fitting integrated with stainless steel sleeve. Push the pipe into the fitting up to the shoulder. Check the inserting depth by looking through the inspection holes on the sleeve shoulder, to ensure that the pipe is completely inserted.



Step5: Pressing

Pressing the tail to open the jaw. Insure the plastic block and sleeve are at the right position in the jaw. the margin of the block must be placed into the groove of the pressing section.



Operating the tool by trigger and holding the trigger until the pressing process is finished, a warning signal will sounds when the pressing is done.

Figure 2 - installation instruction

4.5 USE STAGE

The press fittings would be buried under the ground or inside the wall, exposure sometimes, in a finished building. The failure rate is also extremely low and is consider to be inconsequential (not relevant) in this EPD. In case of pipe repairing, you only need to replace by the new ones. When occurs fittings damage during usage stage, the whole piece of fitting would be discarding and landfilling.

4.6 END OF LIFE STAGE

The Rifeng press fittings which are installed under floor and inside wall are assumed to remain underground at the end of life. All the components of the brass fittings can be collected and recycled, but this is not compulsive. The recycled brass can be melted into the initial raw brass rod by the suppliers.

Based on the provisions of 「 CONSTRUCTION PRODUCTS AND CONSTRUCTION SERVICES PRODUCT CATEGORY RULES Chapter 7 GENERAL SYSTEM BOUNDARIES Table 2 」 , this announcement is "cradle-to-gate EPD", so Product Stage(A1 Raw material supply 、 A2 Transport and A3 Manufacturing are Mandatory modules, but the remaining A4 ~ B7 are selective disclosure. Therefore, this EPD only discloses the necessary items for disclosure.

Chapter 4.3 to 4.6 are for reference only. They are not relevant in this EPD, so they are out of the study scope.

General

This section includes the main details of the LCA study as well as assumptions and methods of the assessment. A summary of the key life cycle assessment parameters is given in Table 4.

Table 4 - Details of LCA Study

Declared unit	1 kg of manufactured fitting
Geographical coverage	China
LCA scope	Cradle to gate

Life cycle thinking is a core concept in sustainable consumption and production for policy and business. Upstream and downstream consequences of decisions must be taken into account to help avoid the shifting of burdens from one type of environmental impact to another, from one political region to another, or from one stage to another in a product's life cycle from the cradle to the grave.

LCA is the compilation of the inputs, outputs and environmental impacts of a product system throughout its life cycle. It is a technique that enables industries to identify the resource flows and environmental impacts (such as greenhouse gas emissions, water and energy use) associated with the provision of products and services.

According to EN 15804 2012+A1:2013, EPDs of construction products may not be comparable if they do not comply with this standard, and EPDs might not be comparable, particularly if different functional units are used.

5.1 CORE DATA COLLECTION

Life cycle data has been sourced from material quantity data and production process data from:

- RIFENG reporting systems and staff
- RIFENG mix suppliers

Core manufacturing data was collected directly from RIFENG manufacturing sites.

- ✓ Electricity consumption was allocated to pipe via mass of pipe produced.
- ✓ Tap Water consumption was allocated to pipe via mass of pipe produced.
- ✓ Diesel consumption was allocated to pipe via mass of pipe produced.

5.2 BACKGROUND DATA

Generic background data was sourced for raw materials in the upstream module, and transport and manufacturing in the core module.

The LCA analysis method is adapted to Simapro 8.2.3 CML V3.02 (release by CML in April 2013 version 4.2) , and use the ecoinvent v3.0 database. For the EPD database, we used the 「Electricity, low voltage {CN}| market for | Alloc Def, S ; 1.17 KgCO₂e/kWh」. This general value means that when using 1 kWh electric power in China, there would be 1.17 Kg CO₂e generating and we can see the different used energy sources as below:

Non-renewable energy	
Energy, gross calorific value, in biomass	0.83%
Energy, gross calorific value, in biomass, primary forest	0.00%
Oil, crude	1.47%
Gas, mine, off-gas, process, coal mining/m ³	0.52%
Coal, brown	0.09%
Coal, hard	90.58%
Gas, natural/m ³	1.12%
Renewable energy	
Energy, kinetic (in wind), converted	0.13%
Energy, solar, converted	0.00%
Energy, geothermal, converted	0.00%
Energy, potential (in hydropower reservoir), converted	5.27%

Emission factor for calculate carbon emissions from electricity use. Almost all background data used for calculation of results are not older than 10 years. Exceptions (reference year not older than 2000) have only a minor impact on the overall results and can be considered representative for the period under review.

5.3 CUT OFF CRITERIA

Environmental impacts relating to personnel, infrastructure, and production equipment not directly consumed in the process are excluded from the system boundary. All other reported data were incorporated and modelled using the best available life cycle inventory data.

5.4 ALLOCATION

Allocation was carried out in accordance with the PCR, section 7.7. No allocation between co-products in the core module as there were no coproducts created during manufacturing.

5.5 VARIATION

The project report does not have tested a variation between different manufacturing locations, because RIFENG just has one site to produce RIFENG PRESS FITTING product supplied to the market.

5.6 PRESS FITTINGS ENVIRONMENTAL PERFORMANCE

The potential environmental impacts used in this EPD are explained in Table 5 and the results for RIFENG PRESS FITTING are shown in Table 6. The use of energy and fresh water resources is shown in Table 7. The use of secondary material and secondary material used as energy resources is listed as 'INA' (indicator not assessed). Table 8 shows the generation of waste throughout the product life cycle

5. LIFE CYCLE ASSESSMENT METHODOLOGY

Table 5 - Environmental indicators used in the EPD

Environmental Indicator		Unit	Description
ADPE (kgSb eq)	Abiotic Depletion Potential – Elements / minerals	Kg antimony equivalents	The extraction of non-living and nonrenewable elements and minerals. These resources are essential in our everyday lives and many are currently being extracted at an unsustainable rate.
ADPF (MJ)	Abiotic Depletion Potential – Fossil Fuels	MJ net calorific value	The extraction of non-living and nonrenewable fossil fuels. These resources are essential in our everyday lives and many are currently being extracted at an unsustainable rate.
GWP (kgCO ₂ eq)	Global Warming Potential	kg carbon dioxide equivalents	Increase in the Earth's average temperature, mostly through the release of greenhouse gases. A common outcome of this is an increase in natural disasters and sea level rise.
ODP (kgCFC11 eq)	Ozone Depletion Potential	kg CFC-11 equivalents	The decline in ozone in the Earth's stratosphere. The depletion of the ozone layer increases the amount of UVB that reaches the Earth's surface. UVB is generally accepted to be a contributing factor to skin cancer, cataracts and decreased crop yields.
POCP (kgC ₂ H ₄ eq)	Photochemical Ozone Creation Potential	kg ethylene equivalents	Ozone in the troposphere is a constituent of smog that is caused by a reaction between sunlight, nitrogen oxide and volatile organic compounds (VOCs). This is a known cause for respiratory health problems and damage to vegetation.
AP (kgSO ₂ eq)	Acidification Potential	kg sulphur dioxide equivalents	A process whereby pollutants are converted into acidic substances which degrade the natural environment. Common outcomes of this are acidified lakes and rivers, toxic metal leaching, forest damage and destruction of buildings.
EP (kgPO ₄ 3- eq)	Eutrophication Potential	Kg phosphate equivalents	An increase in the levels of nutrients released to the environment. A common outcome of this is high biological productivity that can lead to oxygen depletion, as well as significant impacts on water quality, affecting all forms of aquatic and plant life.

Life cycle impact assessment methods used: Simapro 8.2.3 CML V3.02 (release by CML in April 2013 version 4.2)

5. LIFE CYCLE ASSESSMENT METHODOLOGY

Table 6 - Potential environmental impacts per 1 kg of manufactured press fitting

	A1	A2	A3
ADPE (kgSb eq)	8.79E-03	3.14E-08	1.64E-06
ADPF (MJ)	1.67E+02	2.74E-01	2.64E+01
GWP (kgCO ₂ eq)	1.36E+01	1.59E-02	2.90E+00
ODP (kgCFC11 eq)	5.87E-06	3.16E-09	5.40E-08
POCP (kgC ₂ H ₄ eq)	2.34E-02	2.70E-06	1.03E-03
AP (kgSO ₂ eq)	5.92E-01	4.79E-05	2.65E-02
EP (kgPO ₄ 3- eq)	4.47E-01	1.08E-05	2.44E-03
ADPE = Abiotic Resource Depletion Potential – Elements, ADPF = Abiotic Resource Depletion Potential – Fossil Fuel, GWP = Global Warming Potential, ODP = Ozone Depletion Potential, POCP = Photochemical Oxidant Formation Potential, AP = Acidification Potential, EP = Eutrophication Potential			

Table 7 - Use of resources per 1 kg of manufactured press fitting

	A1	A2	A3
PERE (MJ)	1.75E+01	2.00E-03	1.87E+00
PERM (MJ)	0.00E+00	0.00E+00	0.00E+00
PERT (MJ)	1.75E+01	2.00E-03	1.87E+00
PENRE (MJ)	2.17E+02	2.65E-01	1.15E+01
PENRM (MJ)	0.00E+00	0.00E+00	0.00E+00
PENRT (MJ)	2.17E+02	2.65E-01	1.15E+01
SM (kg)	INA	INA	INA
RSF (MJ)	INA	INA	INA
NRSF (MJ)	INA	INA	INA
FW (m3)	1.48E+02	1.10E-02	2.62E-02
PERE = Use of renewable primary energy excluding raw materials, PERM = Use of renewable primary energy resources used as raw materials, PERT = Total use of renewable primary energy resources, PENRE = Use of non-renewable primary energy excluding raw materials, PENRM = Use of non-renewable primary energy resources used as raw materials, PENRT = Total use of non-renewable primary energy resources, SM = Use of secondary material, RSF = Use of renewable secondary fuels, NRSF = Use of non-renewable secondary fuels, FW = Use of net fresh water, INA = Indicator not accessed due to a limitation of the LCA tools and databases used to calculate the required resource flows. INA does not imply zero impact.			

Table 8 - Generation of waste per 1 kg of manufactured press fitting

	A1	A2	A3
HWD (kg)	4.27E-01	4.75E-02	0.00E+00
NHWD (kg)	9.97E-01	1.11E-01	1.47E+00
RWD (kg)	0.00E+00	0.00E+00	0.00E+00
HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed			

5.7 INTERPRETATION OF LCA RESULTS

The majority of environmental impact lies within the raw material supplied to RIFENG manufacturing site – comparatively little impact is caused by the PRESS FITTING manufacturing at RIFENG site.

From the input materials, Brass is responsible for the majority of all environmental impacts and use of resources, although additives were still found to have a significant impact.

- ✓ Brass :
 - ✧ Approximately 92.37% of the environmental impact indicators of Abiotic depletion (fossil fuels).
 - ✧ Approximately 92.89% of the environmental impact indicators of Global warming (GWP100a).

From the manufacturing stage, Electricity is responsible for the majority of all environmental impacts (more than 98%).

6.1 PRODUCT SPECIFICATIONS

The product model declared by this EPD includes a total of products. After LCIA analysis, the difference does not exceed $\pm 10\%$ of the range (Because the functional units are set to be per kilogram of this type of product, so all of the following products are included in the inventory). Therefore, the LCA results announced by this EPD can be applied to the following products.

Table 9- The specification of Rifeng press fittings.

Application	Product code	Fitting type	Diameter (DN,mm)
Hot and cold water installation / Gas application	F5	Equal straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Reducer	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		End cup	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		spigot adapter	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly double fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly single fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Demountable female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Double wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75

6. PRODUCT INFORMATION

(table 9 continue)

Hot and cold water installation / Gas application	F9	Equal straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Reducer	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		End cup	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		spigot adapter	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly double fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly single fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Demountable female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Double wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75

6. PRODUCT INFORMATION

(table 9 continue)

Hot and cold water installation / Gas application	F17	Equal straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Reducer	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		End cup	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		spigot adapter	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly double fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly single fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Demountable female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Double wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75

6. PRODUCT INFORMATION

(table 9 continue)

Hot and cold water installation / Gas application	F18	Equal straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Reducer	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		End cup	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		spigot adapter	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly double fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly single fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Demountable female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Double wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75

6. PRODUCT INFORMATION

(table 9 continue)

Hot and cold water installation / Gas application	F8	Equal straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Reducer	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Equal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Unequal tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Male tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Female tee	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		End cup	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		spigot adapter	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly double fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Assembly single fittings	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Demountable female straight union	12, 16, 20, 25, 26, 32, 40, 50, 63, 75
		Double wall-plated female elbow	12, 16, 20, 25, 26, 32, 40, 50, 63, 75

6. PRODUCT INFORMATION

(table 9 continue)

Hot and cold water installation / Gas application	PF15	Equal straight union	1/8",3/8",1/2",5/8",3/4",1"
		Reducer	1/8",3/8",1/2",5/8",3/4",1"
		Male straight union	1/8",3/8",1/2",5/8",3/4",1"
		Female straight union	1/8",3/8",1/2",5/8",3/4",1"
		Equal elbow	1/8",3/8",1/2",5/8",3/4",1"
		Unequal elbow	1/8",3/8",1/2",5/8",3/4",1"
		Male elbow	1/8",3/8",1/2",5/8",3/4",1"
		Female elbow	1/8",3/8",1/2",5/8",3/4",1"
		Equal tee	1/8",3/8",1/2",5/8",3/4",1"
		Unequal tee	1/8",3/8",1/2",5/8",3/4",1"
		Male tee	1/8",3/8",1/2",5/8",3/4",1"
		Female tee	1/8",3/8",1/2",5/8",3/4",1"
		Wall-plated female elbow	1/8",3/8",1/2",5/8",3/4",1"
		End cup	1/8",3/8",1/2",5/8",3/4",1"
		spigot adapter	1/8",3/8",1/2",5/8",3/4",1"
		Assembly double fittings	1/8",3/8",1/2",5/8",3/4",1"
		Assembly single fittings	1/8",3/8",1/2",5/8",3/4",1"
		Demountable female straight union	1/8",3/8",1/2",5/8",3/4",1"
		Double wall-plated female elbow	1/8",3/8",1/2",5/8",3/4",1"

6.2 OTHER TECHNICAL INFORMATION

For the full overview of the environmental benefits and product features of Rifeng press fittings please refer to Rifeng website: www.rifeng.com

7. REFERENCES

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