

Statement of Verification

BREG EN EPD No.: 000601

Issue 01

This is to verify that the
Environmental Product Declaration
provided by:
Altro Limited



is in accordance with the requirements of:
EN 15804:2012+A2:2019
and
BRE Global Scheme Document SD207

This declaration is for:
1 Altro Screed kit with a weight of 23 kg.

Company Address

Altro Limited
Works Road
Letchworth Garden City
Hertfordshire
SG6 1NW
United Kingdom



Signed for BRE Global Ltd

Emma Baker
Operator

27 June 2024
Date of this Issue

27 June 2024
Date of First Issue

26 June 2029
Expiry Date



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Environmental Product Declaration

EPD Number: 000601

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2023 Product Category Rules for Type III environmental product declaration of construction products to EN 15804+A2 PN 514 Rev 3.1
Commissioner of LCA study	LCA consultant/Tool
Altro Limited Works Road Letchworth Garden City Hertfordshire SG6 1NW United Kingdom	Bala Subramanian/ BRE LINA A2
Declared/Functional Unit	Applicability/Coverage
1 Altro Screed kit with a weight of 23 kg.	Other (please specify). Product specific
EPD Type	Background database
Cradle to Gate with Module C and D	Ecoinvent 3.8
Demonstration of Verification	
CEN standard EN 15804 serves as the core PCR ^a	
Independent verification of the declaration and data according to EN ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate ^b)Third party verifier: Pat Hermon	
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)	
Comparability	
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance	

Information modules covered

Product			Construction		Use stage							End-of-life				Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building						
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, Recovery and/or Recycling potential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Altro Limited
 Altro Resins,
 Unit 5 Station Road Industrial Estate,
 Maiden Newton,
 Dorset,
 DT2 OAE

Construction Product:

Product Description

Altro Screed is a 3-6mm thick epoxy-based resin flooring. Typical uses include reception and communal areas, walkways and corridors and custodial areas.

Altro Screed is available in different colours, so in this EPD, total production data has been used, and the LCA analysis has been conducted for 1 Altro Screed kit with a weight of 23kg.

Technical Information

Variant	3mm standard	3mm slip resistant	4mm standard	4mm slip resistant	6mm standard	6mm slip resistant
FERFA Type	n/a	n/a	6	6	6	6
Nominal thickness	3mm	3mm	4mm	4mm	6mm	6mm
Impact resistance	Limited	Limited	Moderate	Moderate	Excellent	Excellent
Slip resistance EN 16165-Annex C	-	≥ 40	-	≥ 40	-	≥ 40

The technical properties of all products assessed within this EPD.



Main Product Contents

Material/Chemical Input	%
Aggregate	87
Resin	9.5
Hardner	3.5

Note: Material composition of all products assessed within this EPD.

Manufacturing Process

Screed Base

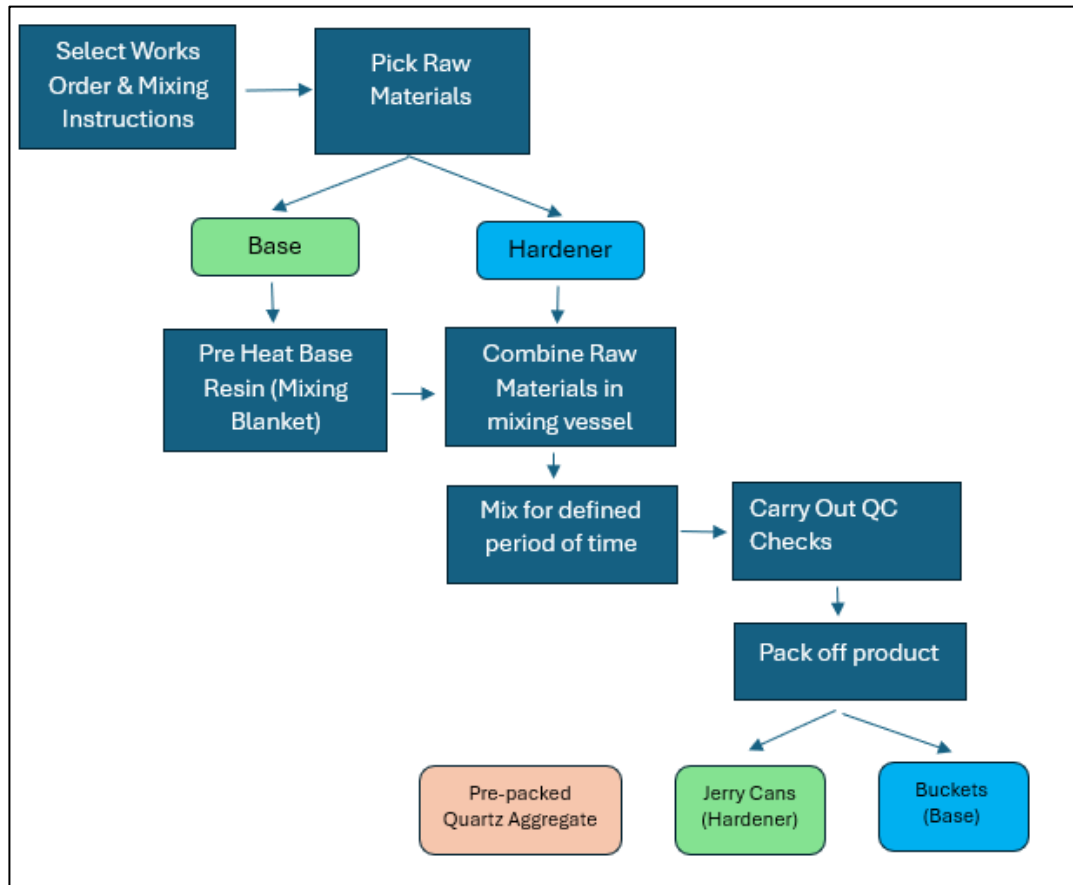
Drums of resin are preheated for several hours using heating blankets. Several additives are then mixed with the resin in a predefined order using a mixing vessel according to designated mixing instructions. QC checks are carried out and the resin is decanted into tubs using gravity pack off equipment.

Hardener

Several raw materials are mixed together in a suitable vessel. After passing QC checks the hardener is packed off into jerry cans using gravity pack off equipment.

Quartz Aggregate arrives in pre blended 20Kg bags.

Process flow diagram



End of Life

Material cannot be recovered at the end of life as it is fused to the floor – other products are installed over it so it remains part of the floor and cannot be recovered. Therefore, according to BRE PCR 3.1, 100% of the Altro Screed product will end up in landfill.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description.

1 Altro Screed kit with a weight of 23 kg.

System boundary

This is a cradle-to-gate with modules C and D LCA, reporting all production life cycle stages of modules A1 to A3 and end of life stages C1-C4, and D in accordance with EN 15804:2012+A2:2019 and BRE 2023 Product Category Rules (PN 514 Rev 3.1).

Data sources, quality and allocation

In this EPD, the functional unit used is kit because the Altro screed is sold in kits and each Altro Screed kit weighs 23kg. The end-user of this EPD can therefore enable the impacts for the number of kits used for the application. Altro Screed is available in different colours, and all products have the same formulation so therefore total production data (01/01/2022 - 31/12/2022) has been taken to conduct the LCA modelling, which was calculated at 25.8%.

Other products are manufactured in addition to all components therefore, the allocation of electricity and water consumption and discharge are required. Allocation to Electricity, water, diesel, kerosene, waste, non-production waste, and wastewater to sewer were allocated using the mass allocation. During the LCA modelling, there is no direct dataset for some of the chemicals. Therefore, the most suitable proxy datasets have been selected for the LCA modelling.

Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e., raw material production) from the ecoinvent 3.8 database. All ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN15804 A2.

ISO14044 guidance. Quality Level	Geographical representativeness	Technical representativeness	Time representativeness
Very Good	Data from area under study.	Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e., identical technology).	n/a
Very Good	n/a	n/a	There is approximately 1-2 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken.

Specific European datasets have been selected from the ecoinvent LCI for this LCA. Manufacturer uses the national grid electricity and natural gas for production, therefore the national grid electricity dataset “Electricity – GB (kWh)” has been used for the LCA modelling (Ecoinvent 3.8). The GWP carbon footprint for using 1 kWh of Electricity – GB is 0.311 in kgCO₂e/kWh. The quality level of time representativeness is also Very Good as the background LCI datasets are based on ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 5 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.

Cut-off criteria

No inputs or outputs have been excluded. All raw materials and packaging inputs, plus their transport, process and general energy and water use, production, and non-production waste, have been included where appropriate, except for direct emissions to air, water, and soil, which are not measured.

LCA Results - 1 Altro Screed kit with a weight of 23 kg

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO ₂ eq	kg CO ₂ eq	kg CO ₂ eq	kg CO ₂ eq	kg CFC11 eq	mol H ⁺ eq	kg (PO ₄) ³⁻ eq
Product stage	Raw material supply	A1	1.27E+01	1.26E+01	6.45E-02	2.25E-02	1.74E-06	6.60E-02	3.60E-03
	Transport	A2	2.54E+00	2.54E+00	2.16E-03	9.96E-04	5.87E-07	1.03E-02	1.63E-04
	Manufacturing	A3	4.25E+00	3.76E+00	4.88E-01	1.26E-03	5.53E-07	2.74E-02	2.89E-04
	Total (Consumption grid)	A1-3	1.95E+01	1.89E+01	5.54E-01	2.48E-02	2.88E-06	1.04E-01	4.05E-03
100% - Landfill									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.91E-01	1.91E-01	1.63E-04	7.51E-05	4.42E-08	7.76E-04	1.23E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	5.58E+01	5.57E+01	6.84E-02	1.27E-02	6.60E-06	8.34E-02	1.57E-02
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

GWP-total = Global warming potential, total;
 GWP-fossil = Global warming potential, fossil;
 GWP-biogenic = Global warming potential, biogenic;
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;
 AP = Acidification potential, accumulated exceedance; and
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

LCA Results (continued)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral & metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m ³ world eq deprived	disease incidence
Product stage	Raw material supply	A1	1.16E-02	1.27E-01	4.52E-02	1.73E-04	2.29E+02	8.26E+00	6.57E-07
	Transport	A2	3.10E-03	3.39E-02	1.04E-02	8.82E-06	3.84E+01	1.73E-01	2.19E-07
	Manufacturing	A3	1.16E-02	1.26E-01	3.51E-02	7.42E-06	5.96E+01	4.06E-01	6.79E-07
	Total (Consumption grid)	A1-3	2.63E-02	2.87E-01	9.07E-02	1.90E-04	3.27E+02	8.84E+00	1.55E-06
100% - Landfill									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.34E-04	2.55E-03	7.82E-04	6.65E-07	2.89E+00	1.30E-02	1.65E-08
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.82E-02	1.79E-01	4.90E-02	1.11E-04	2.62E+02	8.16E+00	7.86E-07
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;
 EP-terrestrial = Eutrophication potential, accumulated exceedance;
 POCP = Formation potential of tropospheric ozone;
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and
 PM = Particulate matter.

LCA Results (continued)

			Parameters describing environmental impacts				
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U ²³⁵ eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	9.17E-01	5.93E+02	1.36E-08	2.77E-07	7.76E+01
	Transport	A2	1.97E-01	2.99E+01	9.69E-10	3.14E-08	2.64E+01
	Manufacturing	A3	6.18E-01	3.36E+01	1.26E-09	2.57E-08	1.14E+01
	Total (Consumption grid)	A1-3	1.73E+00	6.57E+02	1.58E-08	3.34E-07	1.15E+02
100% - Landfill							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.49E-02	2.26E+00	7.30E-11	2.36E-09	1.99E+00
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.71E+00	1.08E+03	3.48E-08	4.04E-07	5.60E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

IRP = Potential human exposure efficiency relative to U235;
 ETP-fw = Potential comparative toxic unit for ecosystems;
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and
 SQP = Potential soil quality index.

LCA Results (continued)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	3.11E+00	0.00E+00	3.11E+00	4.25E+01	1.33E+01	5.57E+01
	Transport	A2	5.40E-01	0.00E+00	5.40E-01	3.77E+01	0.00E+00	3.77E+01
	Manufacturing	A3	-7.53E-01	4.68E+00	3.93E+00	4.29E+01	1.93E+01	6.22E+01
	Total (Consumption grid)	A1-3	2.90E+00	4.68E+00	7.58E+00	1.23E+02	3.26E+01	1.56E+02
100% - Landfill								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	4.07E-02	0.00E+00	4.07E-02	2.84E+00	0.00E+00	2.84E+00
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.10E+01	0.00E+00	1.10E+01	-1.32E+02	3.91E+02	2.59E+02
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

PERE = Use of renewable primary energy excluding renewable primary energy used as 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 non-renewable primary energy resources used as raw materials;
 PENRM = Use of non-renewable primary energy resources used as raw materials;
 PENRT = Total use of non-renewable primary energy resource

LCA Results (continued)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m ³
Product stage	Raw material supply	A1	2.96E-03	0.00E+00	0.00E+00	1.97E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	4.28E-03
	Manufacturing	A3	1.52E-02	1.16E-05	0.00E+00	1.19E-02
	Total (Consumption grid)	A1-3	1.81E-02	1.16E-05	0.00E+00	2.13E-01
100% - Landfill						
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	3.22E-04
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	1.96E-01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	2.84E-01	5.64E+00	1.17E-04
	Transport	A2	4.23E-02	7.51E-01	2.59E-04
	Manufacturing	A3	1.16E-01	1.94E+00	4.43E-04
	Total (Consumption grid)	A1-3	4.42E-01	8.33E+00	8.20E-04
100% - Landfill					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.19E-03	5.66E-02	1.96E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	3.27E+01	1.59E+01	1.54E-03
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00

HWD = Hazardous waste disposed;
 NHWD = Non-hazardous waste disposed;
 RWD = Radioactive waste disposed

LCA Results (continued)

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	3.56E-01	8.58E-08	9.26E-03	1.70E-01	-2.23E-03
	Total (Consumption grid)	A1-3	0.00E+00	3.56E-01	8.58E-08	9.26E-03	1.70E-01	-2.23E-03
100% - Landfill								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
C1 – Deconstruction	When the product reaches the end of its life, it will be extracted from the building sector using power tools. Unfortunately, the waste product cannot be recovered because it has integrated with the floor, becoming part of the substrate. Therefore, according to BRE PCR 3.1, 100% of the Altro Screed will end up in landfill. The energy used for the product removal is not accounted for in the LCA analysis. However, it can be safely assumed that the energy attributed to deconstructing the resin, compared to the overall demolition, will be effectively negligible. As a result, no impacts are attributed to module C1.		
C2- Transportation	50km by road has been modelled for module C2 as a typical distance from the demolition site to the disposal unit. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required.		
	Fuel type / Vehicle type	Road transport	16–32-ton lorry
	Deconstruction site to the disposal unit	km	50
C3- Pre-processing	Altro Screed resin can't be separated from the final waste, so 100% of the product waste will be sent to landfill without any processing (BRE PCR 3.1). Therefore, no impacts from C3.		
C4- Disposal	100% of the waste to landfill	kg	23
Module D	100% of the product will be landfilled so therefore no Module D benefits.		

Interpretation of results

The bulk of the environmental impacts are attributed to the manufacturing of Altro Screed product covered by information modules A1-A3 of EN15804:2012+A2:2019

References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A2:2019. London, BSI, 2019.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines. BS EN ISO 14044:2006. London, BSI, 2006.

BRE Global Product Category Rules (PCR) For Type III EPD of Construction Products to EN 15804+A2, PN 514 Rev 3.1, Feb 2023.

BS EN 16165:2021 - Determination of slip resistance of pedestrian surfaces. Methods of evaluation