

Oven General Specifications

Specifications are subject to change due to continuing engineering improvements and legislative changes. You are urged to contact us for current specifications prior to using this information in your projects. Specific oven services requirements including gas, air flow and connection can be located on the specification sheets for each oven.

The use of gas backup or full gas installations can have many benefits, such as staffing (*reduced attendance during off-peak periods*), logistics (*keeping up a continuous supply of firewood fuel, or a breakdown in deliveries*), shorter heating times from cold, the use of wood is prohibited by regulations or simply the advantages of a Beech oven where wood supply is scarce.

Approvals / Compliance

CE rating Europe

The gas equipment used in Beech stone hearth ovens adheres to all CE directive requirements.

UK Smoke Free Zone Exemption

The full range of Beech Ovens can be used anywhere in the UK.

UL/EPH Rating USA

Please contact us for the separate sheets for UL listed products.

The following pages outline the generic gas specifications, connection, energy and air flow rates related to Beech stone hearth ovens. For further information, please contact Beech Ovens head office or for technical support - technical@beechovens.com.au

General Technical Details

The data plate mounted on the inside of the Gas control cabinet contains the specific information for your oven. The following information is general technical details for all ovens and related Gas types, based on an 80Mj Gas Burner.

	Natural	Propane	Town Gas	Char Grill
Gas Pressure at Burner Injector	1kPa (High)	2.75kPa (High)	0.6kPa (High)	Natural Gas 1kPa LPG 2.75kPa TG 0.6kPa
Gas Pressure at Isolating Valve	1.2kPa (Min) 5.0kPa (Max)	2.75kPa (Min) 5.0kPa (Max)	0.7kPa (Min) 5.0kPa (Max)	NG 1.2kPa (Min) NG 5kPa (Max) LPG 2.75kPa TG 0.7kPa (Min)
Gas Consumption /Hour (approx)	2.0 m ³ / Hr	0.8 m ³ / Hr	3.9 m ³ / Hr	1.3 / 0.52 m ³ / Hr
Timber consumed Hardwood, no Gas Lunch and Dinner	0.1 m ³ / day	0.1 m ³ / day	0.1 m ³ / day	N/A
Secondary air for Gas Burner (Equivalent to a 40cm x 40cm vent under the oven floor)	5.66 litres/sec			
Air Conditioning Heat Load	<2kW Heat Load			
Duct Size	300mm x 300mm Square (or equivalent round) for Fan Assisted 400mm x 400mm square (or equivalent round) for Natural Draft			
Air Flow Required	1 Door Ovens – 700 litres/sec (2520m ³ /Hr) @ 130Pa Static Pressure 2 Door Ovens – 1000 litres/sec (3600m ³ /Hr) @ 130Pa Static Pressure			

The following table shows the correct jet orifice size for the standard Beech Ovens gas burners.

Gas output (Mj)	Natural Gas	LPG (Propane)	Town Gas
50Mj	3.20mm	2.10mm	5.20mm
60Mj	3.60mm	2.30mm	5.40mm
70Mj	3.90mm	2.50mm	5.60mm
80Mj	4.10mm	2.60mm	N/A
Char Grill 19"	2.35mm	1.40mm	3.70mm

Gas burner configurations

The following table shows the different oven models with burner configurations and gas requirements. For specific gas and connection details see the individual oven drawing issued at quoting stage or the individual oven spec sheet.

Oven Model	Gas Back-up Mj (Burner Type(s))	Full Gas Mj (Burner Type(s))	Gas type
REC0700	50 (Tube Burner)	50 (500 Display Burner)	Nat & LPG
REC0850	80 / 60 (Tube Burner)	60 (700 Display Burner)	Nat & LPG
REC1250	80 / 70 (Tube Burner)	80 + 70 (Tube & 700 Display Burner) 80 + 80 (2 x Tube Burners)	Nat & LPG
RGO1250	80 + 50 (Tube Burner & Grill)	80 + 70 + 50 (Tube, 700 Display Burner & Grill)	Nat & LPG
RND0900	80 / 60 (Tube Burner)	70 / 60 (500 Display Burner)	Nat & LPG
RND1100	80 / 70 (Tube Burner)	70 / 70 (700 Display Burner)	Nat & LPG
RND1300	80 (Tube Burner)	80 + 70 (Tube & 700 Display Burner) 80 + 80 (2 x Tube Burners)	Nat & LPG
RND1500	80 (Tube Burner)	80 + 70 (Tube & 700 Display Burner) 80 + 80 (2 x Tube Burners)	Nat & LPG
RND1800	80 (Tube Burner)	80 + 70 (Tube & 700 Display Burner) 80 + 80 (2 x Tube Burners)	Nat & LPG
DCK0850	50 (Bread-loaf Burner)	50 (Bread-loaf Burner)	Nat & LPG
DCK0900	50 (Bread-loaf Burner)	50 (Bread-loaf Burner)	Nat & LPG
DCK1100	50 (Bread-loaf Burner)	50 (Bread-loaf Burner)	Nat & LPG
DCK1300	50 (Bread-loaf Burner)	50 + 50 (Bread-loaf Burner x2)	Nat & LPG
DCK1500	50 (Bread-loaf Burner)	50 + 50 (Bread-loaf Burner x2)	Nat & LPG
DCK1800	50 (Bread-loaf Burner)	50 + 50 (Bread-loaf Burner x2)	Nat & LPG

CE Specifications

The following table outlines the technical details for ovens installed within the CE region.

Natural Gas					
Country	Category	Nominal Pressure	Heat Input	Nominal Rate	Injector Diameter
DE	12ELL	20mBar	G20: 22kW G25: 19kW	2.3m ³ /Hr	3.5mm (28 gauge)
AT, DK, ES, FI, IE, IT, PT, GB, SE, CH	12H	20mBar	G20: 22kW	2.3m ³ /Hr	3.5mm (28 gauge)
BE, FR	12Er	20mBar	G20: 22kW	2.3m ³ /Hr	3.5mm (28 gauge)
Propane					
DE, NL, CH, FR, ES	13P	50mBar	G31: 18.5kW	1.44kg /Hr	2.2mm (44 gauge)
PT, GB, CH, FR, ES	13P	37mBar	G31: 18.5kW	1.44kg /Hr	2.2mm (44 gauge)
Note: CH, FR and ES allow both 37 and 50mBar					
Timber Consumption: Hardwood	0.1m ³ / day				
Airflow required:	700 litres / sec. Suction controlled by system damper. (Direct connect)				
Duct Size: Natural Draft	300mm square (900cm ²) or equivalent area round.				
Duct Size: Fan assisted	300mm square (900cm ²) or equivalent area round.				
Duct Material:	1.2mm galvanised or 0.9mm stainless steel (<i>As per local regulation</i>)				
Secondary Air for gas burner:	6 litres / sec (approximately)				
Air conditioning Heat Load:	<2 kW heat load				
Electrical Data:	220-240 Volts 50 Hz ac 10 Amp supply with earth				

CE and UL Certificate Model Number Changes

The table below outlines the change in model numbers from those listed on CE and UL certificates. Although the model numbers have changed, the technical and operational specifications are unchanged.

The majority of code changes were made to better differentiate, understand and recognise the different shapes and sizes of ovens by the oven code. The following is a brief explanation to the basic standard oven coding structure.

Ovens:

RND = Abbreviates **ROUND**

REC = Abbreviates **RECTANGULAR**

RGO = Abbreviates **RECTANGULAR GRILL OVEN**

0900-1800 = E.g. 900mm **Internal Diameter OR Internal Width** for REC models

Tandoors:

TRN = Tandoor **ROUND**

TBR = Tandoor **BARREL**

TSQ = Tandoor **SQUARE**

0500-0700 = 500mm **OR** 700mm **Internal Diameter**

UL Listing (Underwriters Laboratories, Inc.)

Previous Model Number	Current Model Number
WORECT (Wood Oven - Rectangular)	REC1250
WO850 (Wood Oven 850)	REC0850
WO900 (Wood Oven 900)	RND0900
WO1100 (Wood Oven 1100)	RND1100
WO1300 (Wood Oven 1300)	RND1300
WO1500 (Wood Oven 1500)	RND1500
WO1800 (Wood Oven 1800)	RND1800
500	TRN0500 – TBR0500 - TSQ0500
700	TRN0700 – TBR0700 - TSQ0700

CE Listing (European Conformity)

Previous Model Number	Current Model Number
WO GB (Wood Oven - Gas Backup)	REC0850, REC1250, RND0900, RND1100, RND1300, RND1500, RND1800
TAN GB Series (05.01/07.01) (Tandoor Gas Backup)	TRN0500, TRN0700, TBR0500, TBR0700, TSQ0500, TSQ0700

For further clarification, please contact Beech Oven technical department at technical@beechovens.com.au

Oven Materials

The following section describes the most common materials used in the construction of a Beech Oven. All oven materials are safe to handle when cool.

- The Oven Casing is mild steel with some stainless steel components attached.
- Oven Legs are galvanised steel.
- The Oven Hearth is typically stainless steel or granite. Please check for custom options.
- The Gas control cabinet is stainless steel.
- The Gas control cabinet components are all standard CE or AS approved units (various non-ferrous metals) and standard electrical components.
- The Upper oven cavity is high temperature castable with ceramic wool (KA) insulation between the steel shell and castable material.
- The oven casing is covered with 50mm of ceramic wool insulation.
- The oven base is high alumina clay brick with ceramic board insulation to the steel housing.
- Any glass that might be incorporated is ceramic glass (*Fire-lite, Borafloat or Toughened Safety Glass*)
- The oven transition to the flue system is galvanised or stainless steel.
- The Spray Filter is stainless steel.

The remains of the wood fire should be handled with care. The ash left in the oven may be hot and it will be dusty. Handle with care.

Debris in the Flue is soot and grease (*Creosote, carbon and ash from the cooking oven*).

Disposal of any materials should be confirmed with a local authority as to type of disposal method suitable and permitted.

ECFIA General MSDS

ECFIA GENERIC MSDS

HIGH TEMPERATURE INSULATION WOOLS

31 01 00 *According to 91/155/CEE*

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1 . . . IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

. . . Identification of the product

XYZ (commercial name) contains :

CALCIUM-MAGNESIUM-SILICATE (CMS) WOOL

. . . Identification of the company

Identify (name, address, tel, fax):

- The local supplier (could be the sales office dealing with the particular customer)
- The HSE Department at the head office
- An emergency telephone number (optional)

2 . . . COMPOSITION/ INFORMATION ON INGREDIENTS

. . . Description

Ex : XYZ is a needled blanket.

. . . Composition

CALCIUM-MAGNESIUM-SILICATE (CMS) WOOL

(SiO₂ = 60% - 70%; alkali earth oxides [CaO, MgO] = 25% - 40%; ZrO₂ < 10%)

. . . OTHER INGREDIENTS

Eventually report hazard information for other substances in the product if: - the substance is on the list of dangerous substances - the substance is subject to an occupational exposure limit - you wish to draw the attention on a particular substance

This product is made of minerals, none of which is radioactive under the terms of European Directive Euratom 96/29.

In use this product can become contaminated with other materials and working practices should take into account the presence of such contaminants.

3 . . . HAZARD IDENTIFICATION

May cause mild mechanical irritation to skin, eyes and upper respiratory tract.

4 . . . FIRST AID MEASURES

Skin : In case skin irritation rinse affected areas with water and wash gently.

Eyes : In case of serious eye contact flush abundantly with water; have eye bath available.

5 . . . FIRE FIGHTING MEASURES

Non combustible products.

Use extinguishing media appropriate to the surrounding fire.

6 . . . ACCIDENTAL RELEASE MEASURES

Avoid creating dust. Provide workers with respirators if necessary (see section 8). Follow routine housekeeping procedures. Where possible, use a HEPA vacuum to clean up the spilled material. If sweeping is necessary, use a dust suppressant and place materials in closed containers. Do not use compressed air for clean-up. Avoid clean up procedures that could result in water pollution.

7 . . . HANDLING AND STORAGE

Adapt your work practices to limit handling which can be a source of dust emission.

Avoid damaging the packaging and keep closed when not in use.

8 . . . EXPOSURE CONTROL / PERSONAL PROTECTION

. . . Hygiene standards and exposure limits

Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection. Examples of exposure limits applying (in October 1999) to glass fibers in different countries are given below :

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Germany

0.5 f/ml

TRGS 900, Bundesarbeitsblatt 4/1999

France

1.0 f/ml or 5mg/m³

Circulaire DRT No 95-4 du 12.01.95

UK

2.0 f/ml or 5mg/m³

HSE - EH40 - Maximum Exposure Limit

** Time weighted average numerical concentrations of airborne respirable fibers measured by the conventional membrane filter method or gravimetric concentration of inhalable dust.*

. . . Engineering controls

Review your applications in order to identify potential sources of dust exposure. Local exhaust ventilation, dust collection at source, down draft tables, emission controlling tools and materials handling equipment can all be used to control dust generation and dispersion.

. . . Personal protective equipment

Wear long-sleeved, loose-fitting clothing and gloves to prevent skin irritation.

Goggles or safety glasses with side shields may be worn to prevent eye irritation, especially in case of over head working.

When it is not possible to reduce dust through engineering controls, employees are encouraged to use good working practices together with respiratory protective equipment (RPE). For dust concentrations below the exposure limit value, RPE is not required but FFP2 respirators may be used on a voluntary basis. For short term operations where exposures above the limit value are less than a factor of ten, use FFP2 respirators. In case of higher concentrations, please contact your supplier for advice.

. . . Information and training of workers

Workers should be trained on good working practices and informed on applicable local regulations.

9 . . . PHYSICAL AND CHEMICAL PROPERTIES

Odor

None

Melting point

> 1330°C

Flammability

None

Explosive properties

None

Length weighted geometric mean diameter

> 1.5 µm

10 . . . STABILITY AND REACTIVITY

Upon heating above 900°C for sustained periods, this amorphous material begins to transform to mixtures of crystalline phases. For further information please refer to section 16.

11 . . . TOXICOLOGICAL INFORMATION

. . . Irritant properties

When tested using approved methods (Directive 67/548/EEC, Annex 5, Method B4), fibers contained in this material give negative results. All man-made mineral fibers, like some natural fibers, can produce a mild irritation resulting in itching or rarely, in some sensitive individuals, in a slight reddening. Unlike other irritant reactions this is not the result of allergy or chemical skin damage but is caused by mechanical effects.

. . . Respiratory toxicity

CMS wools have been tested for their biopersistence using methods devised by the European Union. The biopersistence values measured exonerate CMS wools from carcinogen classification under the criteria listed in nota Q of Directive 97/69/EC.

Subchronic inhalation studies on rats with CMS wools at high concentration (150 f>20µm/ml) for 90 days with follow up to one year showed neither sustained inflammation nor cell proliferation. All parameters studied returned rapidly to baseline levels on cessation of exposure.

In a lifetime carcinogenicity test, rats were exposed by inhalation for two years (5 days a week, 6 hours a day) to CMS wool at 200 WHO f/ml. There was neither fibrosis nor carcinogenic response.

After service, CMS wools can contain various crystalline phases including some forms of silica (see section 16).

CMS samples kept at 1000°C for two weeks were not cytotoxic to macrophage-like cells at concentration up to 320µg/cm². In the same test, samples of pure crystalline quartz were significantly active at 20 µg/cm².

12 . . . ECOLOGICAL INFORMATION

No adverse effects of this material on the environment are anticipated.

13 . . . DISPOSAL CONSIDERATIONS

Waste from this product is not classified as "hazardous" or "special" under European Union regulations. Disposal is permitted at landfills licensed for industrial waste. Check for local regulations which may apply. To prevent materials becoming airborne, a covered container or plastic bagging is recommended.

14 . . . TRANSPORT INFORMATION

Not classified as dangerous goods under relevant international transport regulations.

Ensure that dust is not wind blown during transport.

15 . . . REGULATORY INFORMATION

. . . Classification among dangerous substances

Regulatory status comes from European Directive 97/69/EC and its implementations by the Member States.

According to Directive 97/69/EC the fiber contained in this product is a mineral wool belonging to the group of "man-made vitreous (silicate) fibers with random orientation with alkaline oxide and alkali earth oxide (Na₂O+K₂O+CaO+MgO+BaO) content greater than 18% by weight".

Under Directive 97/69/EC all types of man-made vitreous (silicate) fibers are classified as "irritant" despite the fact that testing by the appropriate EU method (B4 in annex 5 of Directive 67/548/EEC) is providing no response and would not result in irritant classification.

Under criteria listed in nota Q of Directive 97/69/EC, CMS wools are exonerated from carcinogen classification because of low pulmonary biopersistence.

. . . Protection of workers

Shall be in accordance with several European Directives and their implementations by the Member States:

(a) Council Directive 80/1107/EEC as amended by Directive 88/642/EEC " on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work ".

(b) Council Directive 89/391/EEC "on the introduction of measures to encourage improvements in the safety and health of workers at work".

(c) Council Directive 98/24/EC "on the protection of workers from the risks related to chemical agents at work".

. . . Other possible regulations

Member States are in charge of implementing European Directives into their own national regulation within a period of time normally given in the Directive. Member States may impose more stringent requirements. Please always refer to any applicable regulation.

16 . . . OTHER INFORMATION

. . . Useful References

Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances. Official Journal of the European Communities, 13 December 1997, L 343 and any Member State implementation. Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work. Official Journal of the European Communities, 5 May 1998, and any Member State implementation.

. . . Precautionary measures to be taken after service and upon removal

Because high concentrations of fibres and other dusts may be generated when after-service products are mechanically disturbed during operations such as wrecking, ECFIA recommends:

- a) control measures are taken to reduce dust emissions and
- b) all personnel directly involved wear an adapted respirator to minimize exposure and comply with local regulatory limits.

These procedures will ensure compliance with local regulatory exposure standards for free crystalline silica. And because devitrified fibers containing silica mixed with amorphous and other crystalline phases are far less biologically active than free crystalline silica dusts, these measures will provide a high degree of protection

. . . . ECFIA Web Site

For more information connect to the ECFIA web site: www.ecfia.org

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