**How to Submit**

**Basic instructions:**

* You may add rows to each of the tables as necessary
* Handwritten Proforma‑A shall not be accepted.
* Applicants need to submit Proforma‑A BOTH electronically via email and hard copy via courier.
* No change must be made in the information submitted via email and the hardcopy. Discrepancy in information may lead to rejection of the application.

**Email Submission**

* Proforma-A needs to be completed along with supporting documents. Take a print and self-attest all pages by providing: (Name, Signature of Authorized Signatory with company seal).
* Scan the signed documents as one single PDF file.
* The data tables in Performa‑A are also provided in MS Excel format. The filled-in excel sheet MUST be submitted along with the PDF file. Thus, your email to BEE shall have two attached files-a PDF and an Excel.
* Submit via email to e3scheme@gmail.com by 05 October 2020, end of day. Forms received thereafter shall not be considered.

**Hardcopy Submission**

* For applications submitted via email by 05 October 2020, the original hardcopy signed self-attested Proforma‑A along with supporting documents should be couriered to the BEE in an envelope marked “EOI for E3 Certification”. The courier be addressed to:

Mr Milind Deore,

Director, Bureau of Energy Efficiency, Sewa Bhawan,

R K Puram Sector-1, New Delhi, 110066

Tel: 011-26766713, email: e3scheme@gmail.com

* The hardcopy must reach the BEE no later than 12 October 2020.

**Instruction for Submission filling up the Performa-A**

**Instructions Table-1: Contact Details of the Brick Manufacturing Enterprise**

**GPS Coordinates of the manufacturing unit:** Provide the GPS coordinates (Latitude and Longitude) of the manufacturing unit. [*GPS location could be taken for a prominent feature of the unit such as kiln, control room, site office etc*]

The GPS coordinates can be found using Google Maps on desktop or mobile android device, i-phone or i-pad.

Please refer the link below to know how to find GPS coordinates:

 <https://support.google.com/maps/answer/18539?co=GENIE.Platform%3DAndroid&hl=en&oco=1>

**Instructions Table-2: Projected annual production for each brick product type (Forecast for 01 October 2020 to 30 September 2021)**

**\*Brick Products:** Means any burnt clay masonry unit. It may be bricks or blocks of different sizes. In addition to the brick products, an enterprise may be manufacturing other clay products such as roof tiles, cladding tiles, etc. However, for the purpose of E3 certification and evaluation of applications, only the brick products will be considered.

**A.** Mention the product type/name such as solid bricks, perforated bricks, multi-hole bricks, hollow blocks, etc. Each product type needs to be mentioned in a separate row.

**B.** Mention the dry weight of each brick product as per the lab test report. In case the product has not been manufactured in the past and product sample is not available for lab test, mention the estimated dry weight in kg (up to 2 decimal places). Dry weight is the weight of brick product in oven dry condition (i.e. at 0% moisture). However, at the time of field verification lab test reports for all brick products need to be furnished.

**C.** Product Dimensions: Mention the product dimensions – Length (L), Breadth (B) and Height/Thickness (H) in mm in the corresponding columns in the form.

**D.** Mention the Bulk Density of each brick product as per the lab test report. In case the product has not been manufactured in the past and product sample is not available for lab test, mention the estimated/indicative Bulk Density in kg/m3. However, at the time of field verification lab test reports for all brick products need to be furnished. Bulk density is defined as the ratio of mass of the dry material of porous body to its bulk volume. Bulk density is measured as per IS 1528 (Part 12).

**E. Estimated Production:** No of pieces of each product type that will be produced in one year starting from the date of application of E3 certificate.

**F.** Mention the type of kiln technology that will be used for firing of bricks for each type brick product (e.g. FCBTK, Chamber kiln, Zigzag kiln, Tunnel kiln, Hoffman kiln, VSBK, etc.).

**G.** Mention the moulding method that will be used for moulding of bricks for each type of brick product (e.g. manual/hand moulding, soft mud moulding machine, extruders, Dry press, etc.).

**H.** Mention the type of drying method that will be used for drying of bricks for each type of brick product (e.g. drying in open, drying in shade, tunnel dryer, chamber dryer, etc.).

**Instruction Table-3: Installed and Commissioned Process and Machinery/Equipment Details**

**A.** Mention the name of the process for which the machinery/equipment is being used (e.g. clay-mix preparation, brick shaping/moulding, drying, firing (kiln), etc.)

**B.** Mention the type of machinery being used for each process (e.g. pugmill, soft mud moulding machine, extruder, tunnel dryer, chamber dryer, tunnel kiln, etc.). In some cases, more than one machinery may have been used for same process. For example, for moulding process both extruder and soft mud moulding machines may have been used, or two different extruders may have been used. Mention details of each machinery in a separate row.

**C.** Mention the ‘Make’ of each machinery/equipment.

**D.** Mention the rated production capacity of each machinery/equipment.

**E.** Attach photograph of each machinery/equipment along with the application form. The photograph should be attached in the same sequence in which details are provided in above table. Also, mention the “S. No.” and “Type of Machinery” on the photograph as corresponding to the above table.

**Instructions Table-4: Fuel currently used in the manufacturing unit**

**A.** Mention the type of fuel (e.g. coal, sawdust, mustard stalk, etc.)

**B.** Mention the method of fuel use, i.e. whether the fuel is being used as external fuel, or internal/ body fuel

**C.** Mention the GCV of fuel (if available)

**Instructions Table 5: Specific Energy Consumption (SEC Vol, MJ/m3) of the Enterprise**

**The Specific Energy Consumption (MJ/m3) can be calculated using the excel tool provided on the BEE website.**

The methodology for SEC calculation is also described below as explained in the E3 Certificate Scheme document.

**(this is an extract from section 2.2 of the E3 scheme document)**

1. The Brick manufacturing process consists of mining, clay preparation, shaping, drying, and firing operations. Usually more than 90% of the energy utilised in manufacturing is in the form of thermal energy used in Brick Kiln for the firing operation. For the purpose of this Scheme, the Specific Energy Consumption of the Brick Manufacturing Enterprise includes only the thermal energy consumption in the brick manufacturing.
2. Specific Energy Consumption energy (SECVol) (MJ/m3) of the Brick Manufacturing Enterprises will depend upon three parameters:
3. Specific energy consumption (SECMass) of the Brick Kiln technology (measured in MJ/kg). It will depend upon the type of kiln technology being used for manufacturing of bricks.
4. Type of Brick products and % share (by volume) of each Brick product in the annual production.
5. Bulk density of each of the Brick product (measured in kg/m3).

E3 certification shall be awarded to an enterprise based on this calculated specific energy consumption (SECVol). For an enterprise, the Specific Energy Consumption (SECVol) (MJ/m3) of the enterprise is defined as:

If the applicant enterprise has **‘*N*’** number of brick kilns producing various brick products, SEC Vol (MJ/m3) of the enterprise can be computed as below:

Where,

1. SEC Mass of the Kiln-i will depend on type of kiln technology and can be determined as per section 2.4.
2. Dry weight of the product is the weight of the fired brick in oven dry condition (i.e. at 0% moisture). Total dry weight of all the products produced in Kiln-i can be determined as:

Where ***‘P’*** is the number of type of products produced in Kiln-i.

1. Total bulk volume of all the products produced in Kiln-i can be determined as:

Where ***‘P’*** is the number of type of products produced in Kiln-i.

**Note:**

1. In addition to brick products, an enterprise may be manufacturing other clay products such as roof tiles, cladding tiles, etc. However, for the purpose of E3 certification and estimation of specific energy consumption (SEC vol) of the enterprise, only the brick products will be considered.
2. Dry weight of fired product, bulk volume and bulk density of brick products mentioned in above equations should be measured in accordance with IS 1528 (Part 12).