

Oggetto: Materia Prima, contenuto di riciclato per prodotti piani acciai al carbonio

Per la produzione dei suoi prodotti la Marcegaglia spa divisione Steel acquista Materie Prime da Acciaierie che possono utilizzare due diverse tecnologie produttive: Basic Oxygen Furnace (BOF) e Electric Arc Furnace (EAF).

Il calcolo del totale riciclato si basa sulla dichiarazione del singolo fornitore, ove non presente tale dichiarazione si fa riferimento ai dati pubblicati dallo Steel Recycling Institute dove il totale di riciclato secondo LEED per ciclo BOF è 27% e per ciclo EAF è 78.8%.

Punteggio LEED applicabile:

Materiali e Risorse (MR) - Credito MR c4: Contenuto di riciclato (da 1 a 2 punti):

In base alla tipologia di produzione del fornitore di materie prime, il totale riciclato secondo LEED varia dal 8% al 86%. Il valore medio su base 2021 è: 26.2%

Materiali e Risorse (MR) - Credito MR c5: Materiali estratti, lavorati e prodotti a distanza limitata (materiali regionali) (da 1 a 2 punti):

La distanza varia a seconda del sito di origine della materia prima e il sito di produzione. In tabella 1 la distanza dei luoghi di origine della materia prima e il sito di produzione. Il valore medio su base 2021 è: 29% dei prodotti proviene da una distanza di origine entro 800 km con una distanza media di 508 km.

Subject : Raw Material, content of recycled for flat carbon steel products

The production of Marcegaglia SpA – Steel Division – comes from purchases of Raw Material from Steel Mills which can apply two different production technologies: Basic Oxygen Furnace (BOF) and Electric Arc Furnace (EAF).

The calculation of the total recycled is based on the declaration of the supplier, where this declaration is not present, reference is made to the data published by the Steel Recycling Institute where the total recycled according to LEED for BOF cycle is 27% and for EAF cycle is 78.8%.

Applicable LEED Credits:

Materials & Resources Credit 4: Recycled Content (from 1 to 2 points):

Depending on raw material technologies, the recycled content according LEED rating ranges from 8% to 86% . The average value for 2021 production is: 26.2%.

Materials & Resources Credit 4: Regional Materials – Extracted, Processed & Manufactured Regionally (from 1 to 2 points):

The calculated distance ranges depending on raw material origins and manufacturing place. In Table 1 the distance between place of origin and place of manufacture. The average value for 2021 production is:29% of products origins are within 800 km (500 miles) with average distance of 508 km.

Tabella 1 / Table 1

Produttore materia prima <i>Raw material producer</i>		ISO 14021 Valore di contenuto riciclato (per unità di massa) <i>Value of recycled content (per mass unit)</i>		LEED %post-consumo +1/2% pre-consumo <i>%post-consumer+1/2% pre-consumer</i>	Distanza Origine <-> Luogo di fabbricazione Marcegaglia ² <i>Distance Origin <-> Place of manufacture Marcegaglia²</i>
Nome Company	Ciclo produttore ¹ <i>Producer route¹</i>	%contenuto post-consumo <i>%content post-consumer</i>	%contenuto post-produzione (pre-consumo) <i>%content post-production (pre-consumer)</i>		
Raw material producer #1	BOF	14,28	3,23	17,5	> 800 km
Raw material producer #2	BOF	7,1	1,1	8,4	600 km
Raw material producer #3	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #4	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #5	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #6	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #7	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #8	BOF	14,28	3,23	17,5	570 km
Raw material producer #9	BOF	19,8	14,4	27,0	170
Raw material producer #10	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #11	EAF	69	19,5	78,8	> 800 km
Raw material producer #12	EAF	76	19,5	85,8	195 km
Raw material producer #13	BOF	14,28	3,23	17,5	> 800 km
Raw material producer #14	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #15	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #16	BOF	14,28	3,23	17,5	> 800 km
Raw material producer #17	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #18	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #19	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #20	EAF	69	19,5	78,8	> 800 km
Raw material producer #21	BOF	14,28	3,23	17,5	> 800 km
Raw material producer #22	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #23	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #24	BOF	19,8	14,4	27,0	800 km
Raw material producer #25	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #26	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #27	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #28	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #29	EAF	69	19,5	78,8	> 800 km
Raw material producer #30	BOF	19,8	14,4	27,0	> 800 km
Raw material producer #31	BOF	19,8	14,4	27,0	> 800 km

¹ DRI/EAF Route comparable to BOF route in terms of recycled content

² Radius distance (<500 miles or 800 km) calculated on Marcegaglia Ravenna as Place of manufacture

(* Ref. To Marcegaglia internal doc. 1415

Allegato 1 / Annex 1



LEED®-NC 2009 Recycled Content Value of Steel Building Products

The U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED®) Green Building Rating System aims to improve occupant well-being, environmental performance, and economic returns of buildings using established and innovative practices, standards, and technologies.

Materials & Resources Credit 4: Recycled Content intends to increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials. As discussed and demonstrated below, **North American** steel building products contribute positively toward both available points. The following is required by LEED-NC:

Credit 4 (1 or 2 points) "Use materials with recycled content such that the sum of postconsumer recycled content plus one-half of the pre-consumer content constitutes at least 10% or 20% (based on cost) of the total value of the materials in the project."

"The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value." Since steel (the material) and steel (the building product) are the same, the value of the steel building product is directly multiplied by steel's recycled content, or:

$$\text{Steel Recycled Content Value} = (\text{Value of Steel Product}) (\text{Post-Consumer \%} + \frac{1}{2} \text{Pre-Consumer \%})$$

The information contained within this brochure provides post-consumer and pre-consumer recycled content percentages for **North American steel building products** and is considered acceptable documentation by the USGBC LEED rating system and green codes and standards. These percentages and values of steel building products are easily entered into the LEED Letter Template spreadsheet for calculation.

To illustrate the application of these steel recycled content values to LEED, manual calculations are shown below for typical Basic Oxygen Furnace (BOF) and Electric Arc Furnace (EAF) steel building products with nominal \$10,000 purchases, using 2011 data. Steel building products include steel stud framing, structural steel framing (wide-flange beams, channels, angles, etc.), rebar, roofing, siding, decking, doors and sashes, windows, ductwork, pipe, fixtures, hardware (hinges, handles, braces, screws, and nails), culverts, storm drains, and manhole covers.

BOF Steel Recycled Content Value for Typical Product:

Steel Stud Framing

$$\text{BOF Steel Recycled Content Value} = 19.8\% + (\frac{1}{2} \times 14.4\%) = 27\%$$

$$\text{Value} = (\$10,000) (27.0\%) = \$2,700$$

(Positive net contributor to 10% and 20% minimum percentage for each point threshold)

EAF Steel Recycled Content Value for Typical Product:

Wide-Flange Structural Steel Framing

$$\text{EAF Steel Recycled Content Value} = 69.0\% + (\frac{1}{2} \times 19.5\%) = 78.8\%$$

$$\text{Value} = (\$10,000) (78.8\%) = \$7,880$$

(Positive net contributor to 10% and 20% minimum percentage for each point threshold)