CALCULATING CREDITS FOR GREEN BUILDING CREDITS
HOW THEY ARE CALCULATED

CENTURION STONE – HELPING ACHIEVE LEED CERTIFICATION

LEED certification points are based on the overall building design concept and performance. Components in a given category must be taken into consideration to assess point compliance. No individual material enables a credit point. Points taken are on the aggregate of all materials and their proportionate relationship to the total dollar cost of all materials.

CONTRIBUTION CREDIT CATEGORY	REQUIREMENTS	CENTURION CONTRIBUTION	COMMENTS
Energy and Atmosphere optimize energy performance	2-10 points depending on percent reduction in energy used based on ASHREA/1ESNA standard 90.1-1999	Centurion Stone can contribute to building energy efficiency of exterior walls. View our R & K factor test.	Building design is responsible for energy analysis to determine value
Material and Resources Local and regional materials	1-2 points depending on 20% of all materials manufactured regionally within a 500 mile radius of project. Additional points for 50% of all materials extracted, harvested, or recovered within 500 miles.	See Contribution Table 1	Centurion Stone representative will provide raw and finish materials place of origin.

TABLE 1

Regional Materials Credits:

Regional materials are identified as those extracted and manufactured within 500 miles of the project site. See Figure 1. Remember, the mileage is based on a straight-line, “As the crow flies” distance, not road mileage. Search the internet for “distance calculations” or go to Google Earth to obtain direct-line distances.

Points in this category are based on the percentage of the cost of materials that come from locations within 500 miles of the building site.

Points Earned: 1 point if regional source percentage is greater than 10% and less than 20%
2 points if regional source percentage is at least 20%
Additional points: For innovation in design where the percent is greater than 30%

No laborer installation cost is included – only the cost of the building material itself.

Figure 1

If only part of the product is extracted within 500 miles of the project, it is that percentage by weight that contributes to the product's regional value. If the raw materials that make stone veneer come from different locations, then just the percentage of regional materials in the stone veneer can be included. This percentage or regional material is based on weight. See Table 1 for calculating example. A similar calculation is figured for each building material.

TABLE 1:

Calculating Percentage of Regional Material for a Building Material

CENTURION RAW MATERIAL	WEIGHT	DISTANCE FROM EXTRACTION SITE TO PROJECT SITE	WEIGHT CONTRIBUTION TO REGIONAL MATERIALS
Shale Aggregate	575 lbs.	144 miles	575 lbs.
Cement	225 lbs.	1 mile	225 lbs.
Fly Ash	15 lbs.	67 miles	15 lbs.
Color Additive / Add Mixtures	3 lbs.	684 miles	--------
TOTALS	818 lbs.		815 lbs.
Percentage of Regional Material in Stone (818/815) x 100% - 99.0%			

LEED requires that the cost of all building materials on the project be included when calculating the building's materials cost. The percentage of regional material for the building is the sum of the regional material value of the materials considered, divided by the total materials value. Once the minimum

percentage of regional materials is achieved for the building to earn the points, the regional materials value of other materials do not have to be considered (Table 2). These percentages of regional materials are then used along with the cost of the materials to determine the regional materials value for each product. A regional source percentage of the building is then calculated by dividing the sum of these regional materials value by the total materials cost and then multiplying by 100 to determine the percentage.

TABLE 2:

Calculating Percentage of Regional Materials Points

MATERIAL	DISTANCE FROM PLANT TO PROJECT SITE	DISTANCE FROM EXTRACTION SITE TO PROJECT SITE	MATERIALS VALUE	REGIONAL MATERIALS VALUE
Concrete	71 miles	74 miles	$384,000	$384,000
Steel Structure	390 miles	653 miles	$424,000	------
Steel Studs	180 miles	644 miles	$178,000	------
Gypsum Board	570 miles	654 miles	$ 97,000	------
Insulation	376 miles	435 miles	$ 11,000	$ 11,000
Centurion Stone	280 miles	284 miles	$118,000	$118,000
Concrete Masonry	59 miles	23 miles	$ 73,000	$ 73,000
Mortar and Grout	78 miles	35 miles	$ 43,000	$ 43,000
Floor Covering	374 miles	47 miles	$ 28,000	$ 28,000
Fenestration and doors	312 miles	812 miles	$143,000	------
Roofing	297 miles	512 miles	$ 23,000	------
Ceiling	125 miles	345 miles	$ 32,000	$ 32,000
Sum Of Values			$1,554,000	$689,000
Total construction cost (includes labor and overhead)			$3,800,000	
Default for total materials cost (45% of total construction cost)			$1,710,000	
Total materials value (lesser of default value and sum of values)			$1,554,000	
Percentage of regional materials: 689,000 x 100 / 1,554,000 = 44.3%				
Points earned: 2				

Conclusion

Although Centurion Stone may contribute to points for regional materials, there are many instances in which that contribution is not needed to achieve the maximum points allowed by regional materials under current green building rating systems. In those cases, a designer and owner are free to choose the stone for the project without considering whether the stone plant is within 500 miles of the project site.

The above information must be used with good technical judgment and the final decisions on its use rest with the project designer and owner.

Centurion's products replace the need for natural stone in both residential and commercial applications. Using Centurion Stone has many positive environmental impacts. Centurion believes the heart of being green is making every effort to participate in recycling.

Centurions products are man made and do not require mining or stripping of our land. This step eliminates the deterioration of non-replenishable natural resources. At Centurion, we believe the heart of being green is making every effort to participate in recycling.

Light Weight

Our stone veneers weight 75% less than most natural stone allowing trucks to haul several times more footage. This allows for more efficient fuel consumption and helps to reduce greenhouse gases.

Raw Materials

Centurion's products contain Portland Cement, Fly Ash, Aggregate and Iron Oxide Colors. Iron Oxide pigment is produced from metal oxides recycled from iron. Generally, the recycled content is about 60% Fly Ash is 100% recycled from coal fired elect plants.

Man/Hand Made

Centurion Stone is produced by hand from filling molds, to extracting and packaging.

Packaging

Packaging is made from 36% recycled materials. Packaging is 100% recyclable from the jobsite. Currently 25% of our packaging is returned to the plant.

Production Mold

Centurion's mold process implements a closed loop system that allows for the re-use of hot melt rubber. This saves in production of raw materials used when making new molds.

Stone Kilns

Centurion's Stone kilns generate their own heat 75% of the year. This saves energy costs in the production process.

Production Waste

Currently 80% of the scraps created through manufacturing are used in construction site fill and diverted from landfills.

Centurion Stone will continually maintain our goal to manufacture a product that is resilient for decades without depleting the natural resources needed for future generations.

* The information in this Guide is strictly an example of calculating a green point. Calculations included are for example purposes only, and are not factual figures or numbers.