

The Energy Rating Index Compliance Option of the 2015 IECC

Eric Makela, Britt/Makela Group



ERI Performance Path

- Additional option for IECC compliance
- Target ERI score is met through a wide range of performance options
- Requires builders to achieve the mandatory code requirements of the 2015 IECC and comply with minimum insulation and window envelope performance requirements of the 2009 IECC

Mandatory Requirements

- R401.2
- R403.5.3
- Building Thermal Envelope must be equal to or greater than SHGC values in Table 402.1.2 or Table 402.1.4 in the 2009 IECC.

2015 IECC Target ERI Scores

The ERI score is defined as a numerical score where 100 is equivalent to the 2006 IECC and 0 is equivalent to a net-zero home. Each integer value on the scale represents a one percent change in the total energy use of the rated design relative to the total energy use of the ERI reference design.

2015 IECC Target ERI by Climate Zone

Climate Zones 1-2: 52

Climate Zone 3: 51

Climate Zone 4: 54

Climate Zone 5: 55

Climate Zones 6: 54

Climate Zones 7-8: 53

Benefits of the Energy Rating Index Score Option

From a Builder's Perspective

- Lower First Costs
- Building Innovation
- Increased Flexibility in Compliance

From a Consumer's Perspective

- Utility Bill Savings
- Resale Value

Estimated Energy Savings 2012 IECC Verses 2015 IECC ERI

Climate Zone	IECC ERI	Location	Percent Savings		Percent Savings (Site)	Percent Savings (Source)
			kWh/y	Th/y		
1A	52	Miami	33%	0%	33%	33%
2A	52	Orlando, FL	33%	0%	31%	31%
2A	52	Houston, TX	33%	0%	31%	31%
2B	52	Phoenix, AZ	33%	0%	31%	31%
3A	51	Charleston, SC	33%	0%	34%	34%
3A	51	Charlotte, NC	33%	39%	26%	31%
3A	51	Ok. City, OK	33%	33%	28%	30%
3B	51	Las Vegas, NV	33%	33%	27%	29%
4A	54	Baltimore, MD	33%	36%	28%	31%
4A	54	Kansas City, MO	33%	36%	26%	31%
5A	55	Chicago, IL	33%	31%	27%	24%
5B	55	Denver, CO	33%	31%	25%	27%
6A	54	Minneapolis, MN	33%	31%	25%	28%
6B	54	Billings, MT	33%	28%	26%	23%
7A	53	Fargo, ND	33%	29%	26%	23%
8	53	Fairbanks, AK	33%	30%	26%	28%

From an Environmental Perspective

- Decreased Emissions
 - 20% Compared to 2012 IECC
 - 40% Compared to 2006 IECC
- Carbon Dioxide Reduction over 271 Million Metric Tons
- ≈77 Coal-fired Power Plants



Estimated Emmissions Savings 2012 IECC Verses 2015 IECC ERI

Climate Zone	CO₂ lb Saved	SO₂ lb Saved	NOx lb Saved	CO₂ % Saved	SO₂ % Saved	NOx % Saved
1	5,499	14	5	32.76%	32.76%	32.76%
2	5,144	13	5	31.17%	31.17%	31.17%
3	4,924	9	1,160	28.56%	25.49%	34.63%
4	4,992	5	2,321	26.87%	19.87%	35.63%
5	4,779	5	2,079	24.40%	19.47%	30.79%
6	5,006	5	2,330	23.98%	18.89%	29.54%
7	5,490	5	2,871	23.20%	16.97%	28.57%
8	7,720	5	4,663	25.45%	16.61%	30.46%
Average across all zones	5,212	8	1,603	27.48%	23.64%	32.24%
Weighted averages	4,985	8	1,469	27.53%	23.67%	32.88%

Questions



CULPTURE
AREA "A"

Panorover
counter

KITCHEN

BATH
8'5" x 13'0"

5'6" jetted tub