

DOCKETED

Docket Number:	19-IEPR-06
Project Title:	Energy Efficiency and Building Decarbonization
TN #:	228287
Document Title:	CanCoverIt Comments High Efficiency Attic Retrofit Modular Approach
Description:	N/A
Filer:	System
Organization:	CanCoverIt
Submitter Role:	Public
Submission Date:	5/15/2019 4:30:50 PM
Docketed Date:	5/15/2019

Comment Received From: CanCoverIt
Submitted On: 5/15/2019
Docket Number: 19-IEPR-06

High Efficiency Attic Retrofit Modular Approach

Additional submitted attachment is included below.

CanCoverIt
johnh@cancoverit.com

Comment - 19-IEPR-06 2019 California Energy Efficiency Action Plan

Building Standards:

There is a need to address the lack of standards surrounding metal attic fixtures from a thermal transfer perspective. Company CanCoverIt has been fielding a modular attic fixture cover solution and learned firsthand that focus on only airtight fixtures fails to address thermal energy transfer. Proper isolation of metal ceiling fixtures from the attic environment is essential to achieving effective building envelope.

Market Transformation:

Offer more challenges and opportunities for open calls to startups and technology providers to field test in controlled settings.

Barriers for energy efficiency are scale of deployment. Retrofits of all existing homes and structures are needed. More priority on improving existing building stocks with modular, high-impact and fast to install improvements. The success of low energy lightbulbs is a model worth replicating for insulation envelope improvements and deeper energy retrofits.

Building Decarbonization:

Focusing primarily on achieving vastly improved attic insulation at scale is essential. Ideally before other measures are taken, attic insulation must be addressed. EPA has been operating RuleYourAttic to address this issue. A leveled approach of scaling out attic insulation improvements through modular retrofits can galvanize the local installer economy and ensure that every homeowner has at least a 'high efficiency attic' in steps to become 'net zero energy ready.' Studies are encouraged to see how much the low hanging fruit of proper attic insulation combined with overall home envelope improvements can benefit the wider grid.

Building envelope improvements have the potential to ensure that existing HVAC systems cycle far less frequently. See attached preliminary airsealing test data from CanCoverIt retrofit.

Low Income and disadvantaged communities:

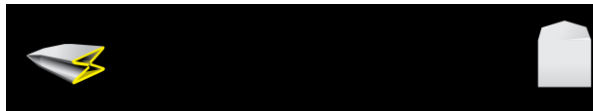
These communities benefit from weatherization well before they can get benefits of solar and new appliances. Ensuring that CA emphasizes weatherization for heat infiltration through attic thermal transfer via metallic objects is a key gap that will serve well to address. The CanCoverIt product has found usage in weatherization programs out of state and has proven a fast and extremely effective method to provide high efficiency attic in a modular. Attic insulation retrofits enable existing HVAC systems to work more effectively, and especially in situations where no HVAC is present, attic insulation is a key protection against heat infiltration.

Standards Compliance:

Ensuring that standards are re-evaluated from a holistic perspective will ensure that certain gaps do not remain present. For example, the standard practice for insulating ceiling fixtures is unclear, and so the behavior is to often leave them uncovered or use a cheap cover such as a cardboard box.

CanCoverIt
johnh@cancoverit.com

Ensuring that standards are not overly complex to interpret will ensure that they are utilized. Standards are meant to simplify, yet if they become too internally complex they can become overwhelming to utilize. Re-evaluating the overall standards environment for holistic use is essential.



testbed unit testing

Fixture Set Up	Effective Open Area (in")	Leakage @ 50 Pa (cfm)	Reduction in Leakage (%)
IC rated 6" fixture no trim	2.64	33	
IC w/ CanCoverIt Low Profile	0.95	11.8	64%
IC w/ CanCoverIt Low Profile, sealed	0.06	0.8	98%
IC w/ CanCoverIt Universal	1.1	13.8	58%
IC w/ CanCoverIt Universal, sealed	0.21	2.6	92%

below 2009 IEC 2.0 CFM threshold

Analysis by Daniel Codd, USD Engineering

CanCoverIt

1300 sf Costa Mesa home
HDD = 1701.5; CDD = 1661.1

Condition	Blower door test leakage CFM	ACH_50	ACH_nat	Percent reduction from previous
Baseline	4534	26.2	1.1	
+ Attic sealing	4387	25.3	1.0	3.2%
+ CanCoverIt installed (qty: 25)	3292	19.0	0.8	25.0%
+ R38 attic insulation	2845	16.4	0.7	13.6%

ACH_nat conversion LBL Factor
24.5

Ceiling Height (ft)
8



CanCoverIt retrofit,

Condition	Heating: Infiltration Heat loss (therms/yr)	Cooling: Infiltration Heat gain (BTU/yr)	Heating: Energy (therms/yr), gas furnace efficiency = 0.8	Cooling: Energy (kWh/yr), A/C SEER = 15	Heating: Infiltration associated GHG emissions (kg CO2e/yr)	Cooling: Infiltration associated GHG emissions (kg CO2e/yr)	Total Infiltration associated GHG emissions (kg CO2e/yr)	Incremental Annual GHG savings (kg CO2e/yr)
Baseline	82.5	8.06E+06	103.2	537.1	546.7	177.8	724.5	
+ Attic sealing	79.8	7.80E+06	99.8	519.7	529.0	172.0	701.0	23.5
+ CanCoverIt installed (qty: 25)	59.9	5.85E+06	74.9	390.0	397.0	129.1	526.0	175.0
+ R38 attic insulation	51.8	5.06E+06	64.7	337.0	343.1	111.6	454.6	71.4

Condition	Infiltration associated heating cost (\$/yr)	Infiltration associated cooling cost (\$/yr)	Infiltration associated Total cost (\$/yr)	Incremental Annual savings	payback period (years) \$39.95 x 25 unit cost; \$0 install	payback period (years) \$17.95 x 25 unit cost; \$0 install
Baseline	\$ 103	\$ 91	\$ 194			
+ Attic sealing	\$ 100	\$ 88	\$ 188	\$ 6		
+ CanCoverIt installed (qty: 25)	\$ 75	\$ 66	\$ 141	\$ 47	21.3	9.6
+ R38 attic insulation	\$ 65	\$ 57	\$ 122	\$ 19		

