

A Standard to Measure Risk and Build Resilience

Certification of Resilient Engineering (CoRE) Ratings

Measuring and improving the resiliency of the nation's building stock is not only a presidential mandate, it preserves property values after a disaster and hastens the return to "business as usual." Current methods to define and assess resiliency are inconsistent and lack both standardization and verification. The newly formed non-profit US Resiliency Council (USRC) develops technically defensible metrics to evaluate and communicate the resiliency of individual buildings.

The USRC generates Certification of Resilient Engineering (CoRE) Ratings. CoRE Ratings will become the standard for due diligence in real estate transactions and for quantifying the value of improved disaster resilience. Using the highest technical standards, CoRE ratings assess safety, reparability and functionality.

The CoRE Rating

The USRC has developed prototype technical standards for a rating system that will provide stakeholders with a clear and concise explanation of a building's risk and resiliency. CoRE Ratings will be generated through the USRC, much like the US Green Building Council® issues LEED® ratings. As LEED® ratings have done, CoRE Ratings will add differentiation within the real estate marketplace, as occupants place a value on improved disaster resilience. Ratings will benefit building users, owners, and lenders, by increasing the value of well-designed properties and offering a metric to minimize risk. Ultimately, Ratings will benefit our communities by creating demand for better buildings overall. They will help cities, states and the federal government understand regional risks and develop long-term strategies to improve overall resilience.

The CoRE rating system builds on the work of national research efforts by universities, government agencies and non-profit professional organizations. The USRC uses resources with a strong foundation of consensus and technical excellence, establishing CoRE as a consistent and trusted rating system by stakeholders at all levels.

To spur marketplace adoption of improved resilience, the initial focus for CoRE is on institutional, commercial, high-performance and government buildings, and multifamily residential buildings. Once CoRE gains momentum in the commercial building market, a rating systems for smaller residential buildings will be explored. First-generation CoRE ratings address earthquake risk, and future-generation ratings will assess multi-hazard risk such as wind, flood and blast.

The CoRE Ratings begin with a basic "Certified" level that indicates a building is expected to be life safe under a hazard similar to that prescribed in building codes. A Certified Rating will not predict reparability and functionality. Higher levels of performance, designated by three, four and five-star ratings would be awarded to buildings with high-performance characteristics that would be expected to limit damage and downtime in events of greater frequency, as well as provide the basic Certified level of safety.

US RESILIENCY COUNCIL
CoRE Ratings for Commercial and
Multi Family Residential Buildings

USRC CoRE Rating	Safety	Reparability	Functionality
★★★★★	Life Safe	Loss <5%	Occupiable Immediately Functional < 72 hours
★★★★	Life Safe	Loss <10%	Occupiable Immediately Functional < 1 month
★★★	Life Safe	Loss <20%	Occupiable < 1 month Functional < 6 months
Certified	Life Safe	Unspecified estimate of loss	Unspecified return to operations

The Credibility Challenge

Existing risk metrics are subject to real or perceived distortion and manipulation. Abuses have been documented in most buyer-pay rating systems, including collateralized bond ratings; MAI appraisals for subprime mortgages and the current PML system for earthquake risk. Sarbanes–Oxley has pushed the accounting industry to meet this credibility challenge by having “an audit of the audits process” where those CPA’s that meet certain criteria and agree to be subject to this annual review of their audit reports are allowed to audit SEC reviewed companies. The USRC will use a similar peer-review process.

Similar to the USGBC®, the USRC adopts an accreditation program for professional engineers who provide CoRE ratings for buildings. Accreditation will require specific knowledge of structural engineering and the performance of buildings under different natural and man-made hazards. The USRC will develop training materials and offer courses and workshops to enhance the technical skills of rating professionals. USRC certification as a CoRE Accredited Professional will ensure that a high level of technical competence and consistency accompany a CoRE Rating. Completed reports prepared by CoRE Accredited Professionals will be audited periodically through a peer review process. The USRC will conduct these audits using an approved auditing structural firm, thus preserving the metric as an independent standard.

Two Level Rating

The USRC will establish two rating categories, to accommodate the needs of a broad group of users.

A CoRE Professional Rating is prepared by a CoRE Accredited Professional. This rating is licensed for non-public use by a building owner in working with lenders or prospective tenants. The report is limited in scope and focuses on safety and basic real estate lending due diligence.

A CoRE Verified Rating requires that a senior engineer from the USRC has seen the property and reviewed the report, design calculations and software inputs prepared by the CoRE Accredited Professional. The Verified Rating can be used by a property owner for any purpose including public disclosure or display on the building itself. This rating will remain with the building unless the building is substantially remodeled or national design standards change.

Demand Drivers

The USRC is targeting four primary stakeholder groups as adopters and users of the USRC CoRE Rating system.

- **Building Owners** will use Ratings to market the resiliency of buildings they intend to sell or lease. Owner/occupiers will also use Ratings to identify potential risks to their employees and business operations.
- **Tenants** will value information on down-time as well as risks to life and contents. They may also use Ratings information to make go/no go decisions about leasing or purchasing property.
- **Lenders and Insurers** will use Ratings information make real estate due diligence and lending decisions and to price property insurance.
- **Governments and Institutions** can use Ratings to identify safe buildings within their portfolio, and to make long-term strategic plans for raising the overall resiliency of communities and campuses, through retrofit, replacement and risk transfer of individual buildings and building classes.

Initial Organizational Structure

The United States Resiliency Council is a 501c3 non-profit organization. Its founders will establish an advisory team and Board of Directors who will hire employees to manage USRC operations. The advisory team and the Board will include building owners, structural engineers, tenants/occupants, lenders, real estate investors and government officials responsible for public safety.

The USRC seeks 1) early adopters to build momentum for CoRE ratings, and 2) sponsors to fund initial operations. Sponsors earn representation on the USRC advisory team or Board of Directors. Sponsorship will primarily support development of technical standards, and outreach efforts to generate demand. The USRC needs funds of \$200,000 in the first year of operation and total funds of \$1,000,000 over its first four years, after which it will reach financial self sufficiency.

Primary sources of ongoing revenue include:

- Certification fees to obtain a CoRE Rating
- Accreditation fees
- Education fees from workshops, conferences, publications, seminars, and accreditation training
- Corporate membership fees

A detailed business plan and budget are available upon request.