Jornadas LIP 2020 (Braga)

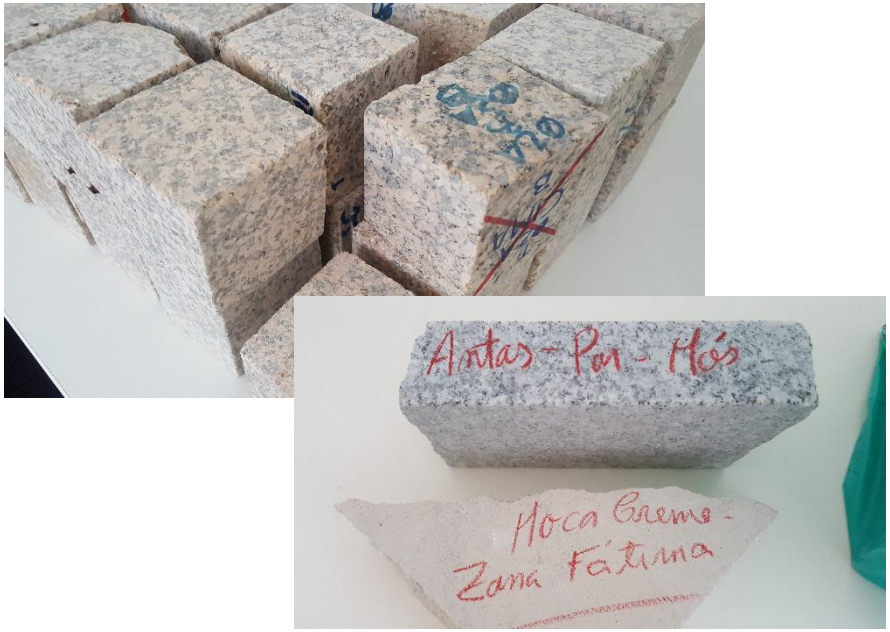
Radon exhalation from building materials

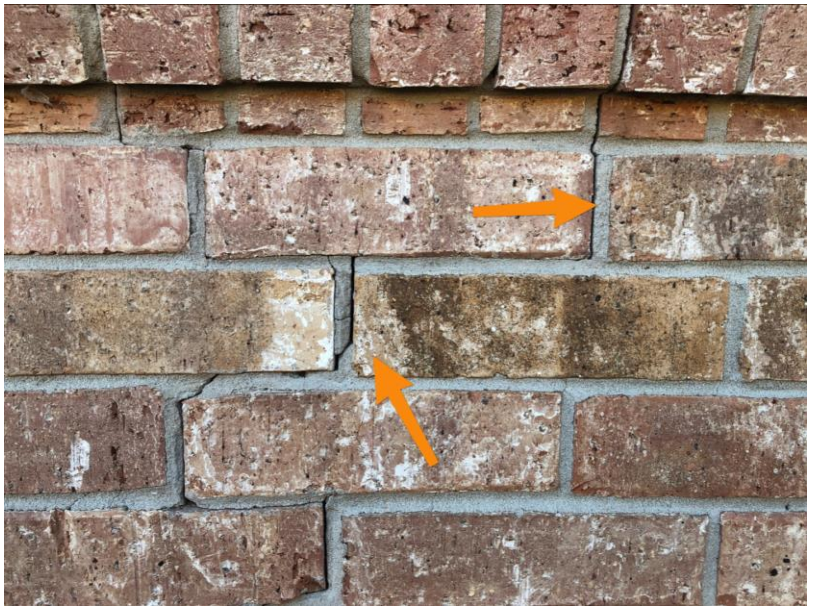
Sandra Soares

https://labexporad.wixsite.com/home

shsoares@ubi.pt; shsoares@lip.pt

Radon concentration can reach **high levels** in dwellings depending **not only** on the building material used like concrete, bricks, phosphogypsum or granite, but also on **natural materials** incorporated in structural elements or decorative materials.

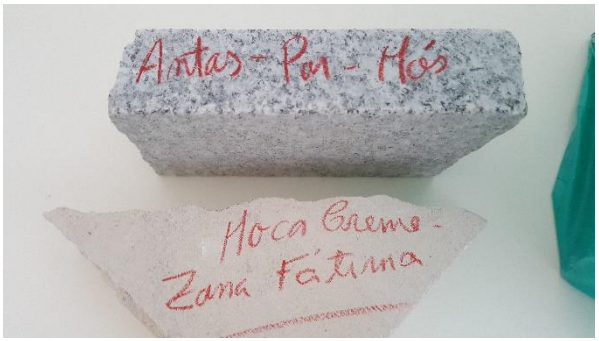


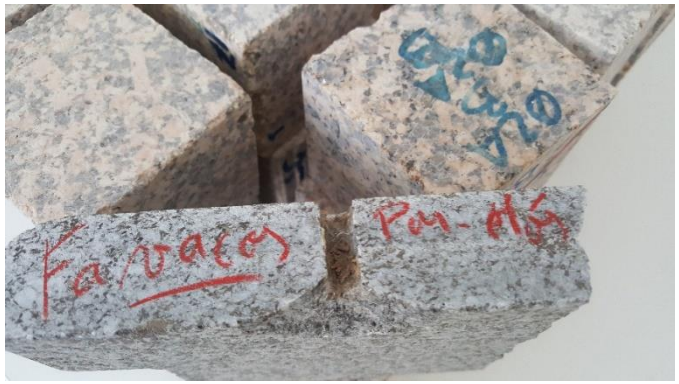


UNIVERSIDADE BEIRA INTERIOR

Aim

The main purpose of this project is to **measure** the radon **specific activity** and **calculate** the radon **mass exhalation rate** from granite samples, used for countertops and fireplaces, with **passive and active measuring technique**.





LabExpoRad UNIVERSIDADE DA BEIRA INTERIOR

ubimedical

LIP

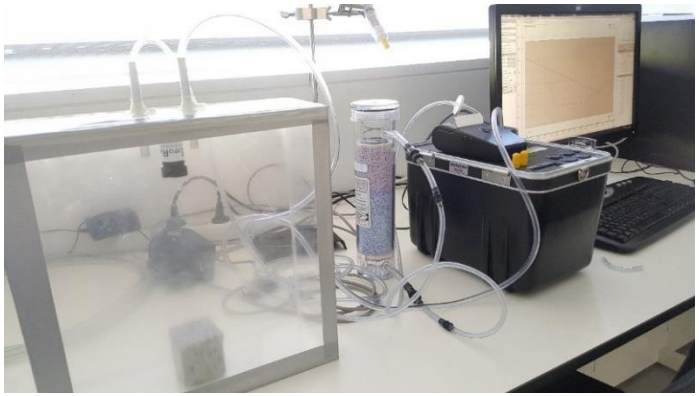
Method

Active measurements, of radon concentration, were performed with the **RAD7** DURRIDGE detector and the passive with CR-39 alpha track detectors.

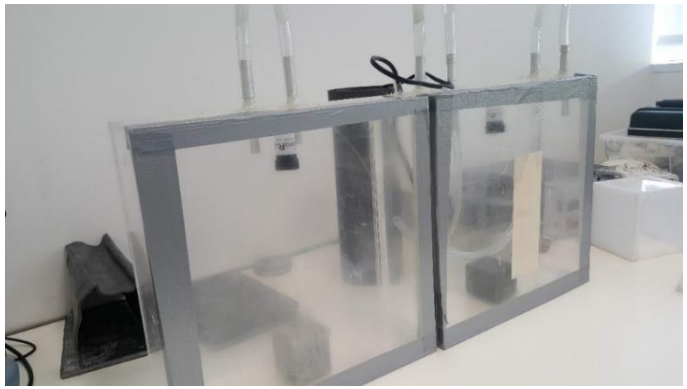
RAD7 DURRIDGE detector

CR-39 alpha track detectors

We used a sealed-can technique for measuring radon exhaled from granite samples: **coated** (with different coatings used over natural rock either to improve waterproofness or indoor performance, namely comfort and desegregation of the natural rock limiting particle loss) and **non-coated.**



a) RAD7 detector with a closed loop arrangement.



b) CR-39 alpha-particle sensitive track detector.

UNIVERSIDADE BEIRA INTERIOR

Conclusions

- ✓ Preliminary results show that radon mass exhalation rates, from the granitic samples analyzed, have relatively low values.

- ✓ From the obtained results we can conclude that the mass exhalation rate is reduced by a factor between 3 or 4 for the coated samples.

LabExpoRad UNIVERSIDADE DA BEIRA INTERIOR

ubimedical

LIP


děkuji
thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
dziękuję
bedankt
go raibh maith agat
dakujem
arigatô
takk
grazie
terima kasih
sukriya
kop khun krap
mauruuru
hvala
dhanyavad
kiitos
faafetai lava
спасибо
рахмат
Баярлалаа
mersi
barka
welalin
tack
dank je
misaotra
matondo
paldies
grazzi
tapadh leat
asante
manana
obrigada
djiere dieuf
mochchakkeram
mamnun
chnorakaloutioun
gratias ago
grácies
sulpay
taku
sobodi
dekuji
sagolun
najis tuke
tanemirt
rahmet
dhanyavadagalu
shukriya
diolch
мерси
trugarez
xiexie
감사합니다
ευχαριστώ