```
#include "compressibleCourantNo.H"
#include "fvc.H"

Foam::scalar Foam::compressibleCourantNo
(
    const fvMesh& mesh,
    const Time& runTime,
    const volScalarField& rho,
    const surfaceScalarField& phi
)
{

    scalar CoNum = 0.0;
    scalar meanCoNum = 0.0;

    {
        scalarField sumPhi
        (
            fvc::surfaceSum(mag(phi))().primitiveField()
        );

        CoNum = 0.5*gMax(sumPhi/mesh.V().field())*runTime.deltaTValue();

        meanCoNum =
            0.5*(gSum(sumPhi)/gSum(mesh.V().field()))*runTime.deltaTValue();
    }

    Info<< "Region: " << mesh.name() << " Courant Number mean: " << meanCoNum
```

```cpp
         << " max: " << CoNum << endl;

    return CoNum;
}


// ********************************************************************** //
```