The nodal Lagrange basis functions of classical continuous Galerkin finite elements of approximation degree $N=2$ on the unit triangle T_u with vertices $(0,0),(1,0),(0,1)$ and $\boldsymbol{\xi}=(\xi,\eta)$ read as follows:

$$\phi_1(\xi,\eta)=2\,\eta^2+4\,\xi\,\eta+2\,\xi^2-3\,\eta-3\,\xi+1, \tag{1}$$
$$\phi_2(\xi,\eta)=-4\,\xi\,\eta-4\,\xi^2+4\,\xi, \tag{2}$$
$$\phi_3(\xi,\eta)=2\,\xi^2-\xi, \tag{3}$$
$$\phi_4(\xi,\eta)=-4\,\xi\,\eta-4\,\eta^2+4\,\eta, \tag{4}$$
$$\phi_5(\xi,\eta)=4\,\xi\,\eta, \tag{5}$$
$$\phi_6(\xi,\eta)=2\,\eta^2-\eta. \tag{6}$$

It is easy to check that the above basis functions satisfy the interpolation property

$$\phi_i(\boldsymbol{\xi}_j)=\delta_{ij}, \tag{7}$$

on the nodes

$$\boldsymbol{\xi}_1=(0,0)\,, \tag{8}$$

$$\boldsymbol{\xi}_2=\left(\frac{1}{2},0\right), \tag{9}$$

$$\boldsymbol{\xi}_3=(1,0)\,, \tag{10}$$

$$\boldsymbol{\xi}_4=\left(0,\frac{1}{2}\right), \tag{11}$$

$$\boldsymbol{\xi}_5=\left(\frac{1}{2},\frac{1}{2}\right), \tag{12}$$

$$\boldsymbol{\xi}_6=(0,1)\,. \tag{13}$$