In our case the complexity is I.D.
as t-start $\in \mathbb{R}^{\cancel{d}}$!

So proof I applies for sure.

$$\|g(t_{mk}) - g(t^\alpha)\| \leq \nabla g \, \| t_{mk} - t^\alpha \|$$

here $d(h(t_{mj}) - x, \partial B) \leq \sqrt{n}\, C_\varepsilon \operatorname{diam}(B_{mj})$

so $\mathbb{P}(A_{mj} \cap E_\varepsilon) \leq \mathbb{P}(h(t_{mj}) \in \partial B + \sqrt{n}\, C_\varepsilon \operatorname{diam} B_{mj})$

$$= \int \mathbb{1}[h(t_{mj}) \in \partial B + \sqrt{n}\, C_\varepsilon \operatorname{diam} B_{mj}] \, d(t_{mj})$$

$$\leq M_n \, \mu(\partial B + \sqrt{n}\, C_\varepsilon \operatorname{diam}(B_{mj}))$$

$$\leq M_n \, \mu(\partial B + \sqrt{n}\, C_\varepsilon \, \delta_m)$$